Sutliffe.

Class s917.98 Book B93

Accession No. 58106

The Warren Library Association.

Digitized by the Internet Archive
in 2026

https://archive.org/details/alaskanarrativeg0001john

ALASKA

VOLUME I

PAINTING BY R. SWAIN GIFFORD.

A. HOEN & CO. BALTIMORE.

BARRY GLACIER,

Entrance to Harriman Fiord, Prince William Sound.

HARRIMAN ALASKA EXPEDITION
WITH COOPERATION OF WASHINGTON ACADEMY OF SCIENCES

ALASKA

VOLUME I

317.98
B93

NARRATIVE, GLACIERS, NATIVES

BY JOHN BURROUGHS, JOHN MUIR
AND GEORGE BIRD GRINNELL

S8106

NEW YORK
DOUBLEDAY, PAGE & COMPANY
1901

WITHDRAWN
OHIO UNIVERSITY
LIBRARY

Copyright, 1901,
by
Edward H. Harriman.

CONTENTS

PAGE
List of Colored Plates.................................v–vi
List of Photogravure Plates...........................vi–x
List of Text Figures................................x–xx
List of Maps..xx
Preface.......................................xxi–xxiii
Introduction...................................xxv–xxxi
List of Members of the Expedition............xxxiii–xxxv
List of Committees.........................xxxvi–xxxvii
Alaska (poem). Charles Keeler..................xxxviii
Narrative of the Expedition. John Burroughs.......1–118
The Pacific Coast Glaciers. John Muir............119–135
Natives of the Alaska Coast Region. George Bird Grinnell.....................................137–183
The Discovery and Exploration of Alaska. William Healey Dall.................................185–204
Days among Alaska Birds. Charles Keeler......205–234
The Forests of Alaska. Bernhard E. Fernow....235–256
Geography of Alaska. Henry Gannett..........257–277
The Atmosphere of Alaska. William H. Brewer..279–289
Bogoslof, Our Newest Volcano. C. Hart Merriam..291–336
The Salmon Industry. George Bird Grinnell....337–355
Fox Farming. M. L. Washburn.................357–365
The Innuit People (poem). William Healey Dall..367–370
Index.......................................371–383

ILLUSTRATIONS

COLORED PLATES

LANDSCAPES

Barry Glacier, entrance to Harriman Fiord........frontispiece to vol. I
Painted by R. Swain Gifford.

FACING PAGE

Sunset, Gulf of Georgia 20
Painted by Fred S. Dellenbaugh.

Indian seal hunter's hut, Yakutat Bay.................................. 60
Painted by R. Swain Gifford.

Volcano of Iliamna, Cook Inlet... 76
Painted by R. Swain Gifford.

Pavlof Volcanoes from Shumagin Islands 88
Painted by R. Swain Gifford.

Mt. St. Elias from Yakutat Bay 114
Painted by R. Swain Gifford.

Mt. Fairweather from the northwest..................................... 118
Painted by Fred S. Dellenbaugh.

Camp of Indian seal hunters.. 158
Painted by Fred S. Dellenbaugh.

Frazer Reach, British Columbia.....................frontispiece to vol. II
Painted by Fred S. Dellenbaugh.

Mt. Cook from Yakutat Bay 257
Painted by R. Swain Gifford.

Bryn Mawr and Smith Glaciers, College Fiord........................ 276
From photograph by C. Hart Merriam.

Sunset, Yakutat Bay 279
Painted by R. Swain Gifford.

Long Mountain, Unalaska, from Dutch Harbor 280
Painted by Fred S. Dellenbaugh.

Popof Strait, Shumagin Islands 337
Painted by Fred S. Dellenbaugh.

BIRDS

Painted by Louis A. Fuertes.

Chestnut-backed chickadee (*Parus rufescens*)........................ 28
Head of pomarine jaeger (*Stercorarius pomarinus*)................ 58
Alaska longspur (*Calcarius lapponicus alascensis*).................. 92
King eider (*Somateria spectabilis*)....................................... 102

Long-tailed jaeger (*Stercorarius longicaudus*) 108
Hyperborean snowflake (*Passerina hyperborea*) 110
Kadiak pine grosbeak (*Pinicola enucleator flammula*) 205
Rufous hummingbird (*Selasphorus rufus*) 208
Golden-crowned sparrow (*Zonotrichia coronata*) 210
Heads of: (1) Violet-green cormorant (*Phalacrocorax pelagicus robustus*); and (2) White-crested cormorant (*Phalacrocorax dilophus cincinatus*) 212
Harlequin duck (*Histrionicus histrionicus*) 214
Jaegers on the wing 216
Willow ptarmigan (*Lagopus lagopus*) 218
Heads of: (1) Tufted puffin (*Lunda cirrhata*); (2) Horned puffin (*Fratercula corniculata*) 228
Horned and tufted puffins 232
Sabine Gull (*Xema sabini*) 234

MAMMALS

Painted by Charles R. Knight.

Kadiak fox 82
Kadiak bear 84

FLOWERS

Painted by Frederick A. Walpole.

Alaska heathers in bed of reindeer moss 32
Calypso orchid 46
Columbine 66
Salmonberry 116
Pyrolas 206
Polemoniums from Kadiak 224
Narcissus buttercup 254

PHOTOGRAVURE PLATES

Shoshone Falls, Idaho 6
From photographs by A. K. Fisher and E. H. Harriman, May 27, 1899.
Hanging valleys, Inside Passage, British Columbia 22
From photographs by C. Hart Merriam, June 3, 1899.
Skagway, Alaska, June 7, 1899 30
From photograph by C. Hart Merriam.
Icebergs in Glacier Bay 34
From photograph by C. Hart Merriam.

East end of Muir Glacier and adjacent gravel moraine 36
From photograph by E. S. Curtis, June 10, 1899.
Front wall of Muir Glacier 38
From photographs by E. S. Curtis, June, 1899.
Sunset on Muir Inlet, Glacier Bay 42
From photograph by E. S. Curtis.
Bergs stranded at low tide, near Muir Glacier 44
From photograph by E. S. Curtis, June, 1899.
Footpath along Indian River, Sitka 48
From photograph by E. S. Curtis, June 16, 1899.
Drift ice, Yakutat Bay 56
From photograph by C. Hart Merriam, June 20, 1899.
Part of Columbia Glacier, Prince William Sound 68
From photograph by E. S. Curtis, June 26, 1899.
Amherst and Crescent Glaciers, College Fiord 70
From photograph by C. Hart Merriam, June 26, 1899.
Harvard Glacier, College Fiord, Prince William Sound 72
From photograph by E. S. Curtis, June 26, 1899.
Harriman Glacier, Harriman Fiord, Prince William Sound...... 74
From photograph by E. S. Curtis, June 27, 1899.
Village of Kadiak, Alaska 80
From photograph by C. Hart Merriam, July 4, 1899.
Mr. Harriman's Kadiak bear on hillside where shot.................. 84
From photograph by Louis A. Fuertes, July 4, 1899.
Mt. Shishaldin 90
From photographs by U. S. Fish Commission.
Sea-lions, Pribilof Islands, Bering Sea..................................... 94
From painting by C. B. Hudson from photograph by H. D. Chichester.
Harem of fur-seals, St. Paul Island, Bering Sea....................... 96
From photograph by C. Hart Merriam, July 9, 1899.
Plover Bay, Siberia... 98
From photograph by C. Hart Merriam, July 11, 1899.
Eskimo topek, Plover Bay, Siberia.. 100
From photograph by E. S. Curtis, July 11, 1899.
Eskimo boy and girl, Port Clarence, Alaska............................ 104
From photograph by C. Hart Merriam, July 12, 1899.
Totem poles at Deserted Village, Cape Fox 116
From photograph by E. S. Curtis, July 26, 1899.
Columbia Glacier, from Heather Island.................................. 119
From photograph by E. S. Curtis, June 27, 1899.
Front of Barry Glacier 120
From photograph by C. Hart Merriam, June 26, 1899, 8:30 PM.
The 'George W. Elder' near Wellesley Glacier, College Fiord.. 122
From photograph by C. Hart Merriam, June 26, 1899.
Serpentine Glacier, Harriman Fiord 124
From photograph by E. S. Curtis, June 27, 1899.
Hubbard Glacier, Disenchantment Bay 126
From photograph by G. K. Gilbert, June 21, 1899.

Yale Glacier, College Fiord 128
From photograph by C. Hart Merriam, June 26, 1899.
Trees upset by La Perouse Glacier 130
From photograph by G. K. Gilbert, June 18, 1899.
West front of Columbia Glacier 132
From photograph by E. S. Curtis, June 27, 1899.
North and South corners of Harriman Glacier 134
From photographs by E. S. Curtis, June 27, 1899.
Columbia Glacier, from Heather Island 136
From photograph by E. S. Curtis, June 26, 1899.
Deserted Indian village, Cape Fox, Alaska 137
From photograph by E. S. Curtis, July 26, 1899.
Beaver totem pole, Deserted Village 146
From photograph by E. S. Curtis, July 26, 1899.
Chief's house, Deserted Village, Cape Fox 148
From photograph by E. S. Curtis, July 26, 1899.
Indian sealers' camp, Yakutat Bay 160
From photograph by E. S. Curtis, June 22, 1899.
Eskimo alongside ship, Plover Bay, Siberia 170
From photographs by C. H. Merriam and W. B. Devereux, July 11, 1899.
Eskimo winter hut, Plover Bay, Siberia 172
From photograph by E. S. Curtis, July 11, 1899.
Eskimo baskets, Port Clarence; Aleutian baskets, Atka Island ... 180
From photographs by E. S. Curtis.
Indian mending his canoe; Sitka Indian huts 186
From photographs by E. S. Curtis, June 16, 1899.
Hut on Wood Island 188
From photograph by E. S. Curtis, July 4, 1899.
Mt. Edgecumbe from mountain back of Sitka 190
From photograph by G. K. Gilbert, June 16, 1899.
Interior of Greek church at Sitka 192
From photograph by E. S. Curtis.
Juneau, Alaska 194
From photograph by C. Hart Merriam, July 25, 1899.
Park-like shores near Kadiak 196
From photograph by C. Hart Merriam, July 1, 1899.
Dutch Harbor, Unalaska 198
From photograph by E. S. Curtis, July 8, 1899.
Fort Wrangell and Sitka Harbor 200
From photographs by E. S. Curtis.
Indian River, near Sitka 202
From photograph by E. S. Curtis, June 16, 1899.
Heather Island, Columbia Bay 220
From photograph by E. S. Curtis, June 27, 1899.
Lily pond, near Kadiak, Alaska 222
From photograph by E. S. Curtis, July 3, 1899.
Unalaska hillsides 226
From photograph by U. S. Fish Commission.

Gulls on St. George Id., Murres on Walrus Id., Pribilof group... 230
From photographs by H. D. Chichester.
Entrance to Wrangell Narrows.......... 236
From photograph by E. S. Curtis, June 5, 1899.
Lupines and Sitka Spruce forest on Wood Island, near Kadiak ... 238
From photographs by C. Hart Merriam, July 4, 1899.
Scrub pine in bog, near Wrangell.......... 242
From photograph by E. S. Curtis, June 5, 1899.
East coast of Vancouver Island.......... 244
From photograph by G. K. Gilbert, June 1, 1899.
'The Spruce Forest,' Unalaska, planted in 1805 246
From photograph by E. S. Curtis, July 8, 1899.
Trees on Kadiak Island.......... 246
From photograph by E. S. Curtis, July 3, 1899.
Indian River, Sitka.......... 248
From photograph by E. S. Curtis, June 16, 1899.
Resurrected Forest near Muir Glacier.......... 250
From photograph by E. S. Curtis, June 11, 1899.
Forest overturned by Columbia Glacier 252
From photograph by E. S. Curtis, June 27, 1899.
A 'hanging valley,' Frazer Reach 258
From photograph by E. S. Curtis, June 3, 1899.
Russell Fiord, Yakutat Bay 260
From photograph by E. H. Harriman, June 20, 1899.
Harriman Glacier, head of Harriman Fiord.......... 262
From photograph by E. H. Harriman, June 26, 1899.
Mt. Pavlof, Alaska Peninsula 264
From photograph by C. Hart Merriam, July 7, 1899.
Mt. Fairweather and Mt. Lituya.......... 266
From photograph by C. Hart Merriam, July 24, 1899.
Islets in Sitka Harbor.......... 268
From photograph by E. S. Curtis.
Mountains on Alaska Peninsula.......... 270
From photograph by E. H. Harriman.
Entrance to Saldovia, Kenai Peninsula 270
From photograph by E. S. Curtis.
Columbia Glacier at contact with forested island 272
From photograph by E. S. Curtis, June 28, 1899.
Fur-seals, St. Paul Island, Bering Sea.......... 274
From photograph by C. Hart Merriam, August, 1891.
Davidson Glacier, Lynn Canal 282
From photograph by C. Hart Merriam, June 6, 1899.
Botanizing on Hall Island 284
From photographs by E. S. Curtis, July 14, 1899.
Members of the expedition on St. Matthew Island 286
From photographs by E. S. Curtis, July 15, 1899.
Sun and clouds; Last view of the Pacific.......... 288
From photographs by E. S. Curtis.

Bogoslof Volcano, Bering Sea, from the northeast.................... 291
From photograph by C. Hart Merriam, August 11, 1891.

Old and New Bogoslof.. 308
From photographs by Lt. G. H. Doty, May 21, 1884.

West side of Bogoslof Volcano 312
From photograph by U. S. Fish Commission, August 11, 1891.

New Bogoslof from connecting spit, Ship Rock in foreground..... 322
From photograph by Lt. G. H. Doty, May 21, 1884.

Murres or 'Arries' on Walrus Island, Pribilof group 330
From photograph by H. D. Chichester.

Stampede of sea-lions, Bogoslof Volcano................................ 332
From painting by C. B. Hudson, from photographs by Merriam.

At Lowe Inlet, British Columbia 340
From photograph by E. S. Curtis.

Salmon drying at Chernofski village, Aleutian Islands 348
From photograph by U. S. Fish Commission.

Eskimo settlement, Plover Bay, Siberia.................................. 367
From photograph by E. S. Curtis, July 11, 1899.

TEXT FIGURES

Green River Butte, Wyoming 5
Drawn by A. H. Baldwin from photograph by Hayden Survey.

Sagebrush plain, Idaho 8
Drawn by A. H. Baldwin from photograph by C. Hart Merriam.

Snake River Canyon, near Shoshone Falls, Idaho.................. 9
Drawn by W. E. Spader from photograph by C. Hart Merriam.

Shoshone Falls, Idaho 11
Drawn by W. E. Spader from photograph by G. K. Gilbert.

An irrigating wheel 13
Drawn by W. E. Spader from photograph by U. S. Geological Survey.

Latourelle Falls, Oregon 15
Drawn by A. H. Baldwin from photograph.

Multnomah Falls, Oregon 16
Drawn by A. H. Baldwin from photograph.

Vista of Inside Passage, British Columbia.............................. 19
Drawn by W. E. Spader from photograph by C. Hart Merriam.

Inside Passage, Southeastern Alaska 20
Drawn by Louise M. Keeler from photograph by C. Hart Merriam.

An Alaska fiord 21
Drawn by A. H. Baldwin from photograph by U. S. Coast Survey.

Indian village of Metlakahtla... 24
Drawn by W. E. Spader from photograph by A. K. Fisher, June 4, 1899.

Interior of church made by Indians at Metlakahtla.................... 25
Drawn by W. E. Spader from photograph by W. B. Devereux.

Sunset in Inside Passage.. 27
Drawn by W. E. Spader from photograph by Wesley R. Coe.

Totem poles at Wrangell........ 28
Drawn by Louise M. Keeler from photograph by Charles Keeler.
Passage near Wrangell Narrows........ 28
Drawn by W. E. Spader from photograph by C. Hart Merriam.
Old log church at Juneau........ 29
Drawn by Louise M. Keeler from photograph by W. H. Averell.
Davidson Glacier, Lynn Canal........ 30
Drawn by Louise M. Keeler from photograph by C. Hart Merriam.
Head of Lynn Canal........ 31
Drawn by Louise M. Keeler from photograph by U. S. Coast Survey.
Looking down at head of Lynn Canal from White Pass Railroad.. 32
Drawn by Louise M. Keeler from photograph by Charles Keeler.
Railroad terminus, summit of White Pass........ 33
Drawn by Baldwin from photograph by Curtis, June 7, 1899.
Custom house and flags of both nations on provisional boundary, summit of White Pass........ 33
Drawn by Louise M. Keeler from photograph by Curtis, June 7, 1899.
Sled-load of grain, White Pass........ 34
Drawn by A. H. Baldwin from photograph by E. S. Curtis.
Muir Glacier........ 35
Drawn by Louise M. Keeler from photograph by Charles Keeler.
Muir Cabin, Glacier Bay........ 35
Drawn by S. B. Nichols from photograph by C. Hart Merriam.
Muir Glacier, from mountain on south side........ 38
Drawn by Baldwin from photograph by G. K. Gilbert, June 10, 1899.
Camp of Harriman party on Muir Glacier........ 39
Drawn by A. H. Baldwin from photograph by C. Hart Merriam, taken at 3 AM, June 9, 1899.
Camp on Point Gustavus, Glacier Bay........ 41
Drawn by W. E. Spader from photograph by Leon J. Cole, June 12.
Crevasses on Muir Glacier........ 43
Drawn by W. E. Spader from photograph by William H. Averell.
Large rock supported on column of ice, Muir Glacier........ 44
Drawn by Louise M. Keeler from photograph by Wesley R. Coe.
Resurrected forest, near Muir Glacier........ 46
Drawn by W. E. Spader from photograph by E. S. Curtis.
Old Russian barracks, Sitka........ 48
Drawn by A. H. Baldwin from photograph by E. S. Curtis.
Tree-capped islets near Sitka........ 49
Drawn by Louise M. Keeler from photograph by E. S. Curtis.
Rear view of Greek church, Sitka........ 49
Drawn by Louise M. Keeler from photograph by E. S. Curtis.
Islands near Sitka........ 50
Drawn by Louise M. Keeler from photograph by E. S. Curtis.
Russian Blockhouse at Sitka........ 50
Drawn by Louise M. Keeler from photograph by E. S. Curtis.
Greek church, Sitka........ 51
Drawn by A. H. Baldwin from photograph by E. S. Curtis.

Russian cemetery at Sitka 51
Drawn by Louise M. Keeler from photograph by E. S. Curtis.
West end of La Perouse Glacier 53
Drawn by Spader from photograph by Merriam, June 18, 1899.
Low forested shores on south side of Yakutat Bay 53
Drawn by Louise M. Keeler from photograph.
Yakutat Village 54
Drawn by S. B. Nichols from photograph by Merriam, June, 1899.
Map of Yakutat Bay, Alaska.. 55
By Henry Gannett.
Cascading Glacier, Russell Fiord 56
Drawn by John L. Ridgway from photograph by G. K. Gilbert.
Ship at edge of drift ice, Yakutat Bay 57
Drawn by W. E. Spader from photograph by C. Hart Merriam.
Camp of hunting party on north shore of Yakutat Bay 58
Drawn by W. E. Spader from photograph by C. Hart Merriam.
Canoe in ice, Yakutat Bay 59
Drawn by W. E. Spader from photograph by C. Hart Merriam.
Seal-hunters' camp, Yakutat Bay 60
Drawn by Louise M. Keeler from photograph by E. S. Curtis.
Yakutat Indians paddling canoe 60
Drawn by W. E. Spader from photograph.
Jaeger on the wing.. 61
Drawn from nature by L. A. Fuertes.
Our ship, the George W. Elder... 61
Drawn by W. E. Spader from photograph by E. S. Curtis.
Sunset, Yakutat Bay 62
Engraved on wood by Louis S. Williams from photograph by Curtis.
Black-footed albatross on the wing 64
Drawn from nature by L. A. Fuertes.
Salmon Cannery at Orca, Prince William Sound....................... 65
Drawn by W. E. Spader from photograph by C. Hart Merriam.
Columbia Glacier from a distance.. 66
Drawn by Louise M. Keeler from photograph by W. B. Devereux.
Looking down on front of Columbia Glacier............................. 67
Drawn by Louise M. Keeler from photograph by G. K. Gilbert.
Gilbert's party setting out for Columbia Glacier...................... 68
Drawn by Louise M. Keeler from photograph.
Camp on Heather Island, near Columbia Glacier...................... 68
Drawn by Louise M. Keeler from photograph by E. S. Curtis.
College Fiord, showing Bryn Mawr and Harvard Glaciers......... 70
Drawn by Louise M. Keeler from photograph by Curtis, June 26, 1899.
Distant view of Barry Glacier at entrance to Harriman Fiord...... 72
Drawn by A. H. Baldwin from photograph by C. Hart Merriam.
Serpentine Glacier, Harriman Fiord....................................... 73
Drawn by Baldwin from photograph by C. H. Merriam, June 26, 1899.
Barry Glacier. Near view, showing ice caves........................ 73
Drawn by Louise M. Keeler from photograph by Charles Keeler.

Homer, Kachemak Bay.......... 76
Drawn by Louise M. Keeler from photograph by A. K. Fisher.
Shore of Uyak Bay, Kadiak Island.......... 78
Drawn by Charles B. Hudson from photograph by W. B. Devereux.
Bold headland, near Kadiak.......... 80
Drawn by Louise M. Keeler from photograph by E. S. Curtis.
Greek church at Kadiak.......... 82
Drawn by S. B. Nichols from photograph by C. Hart Merriam.
Cone Mountain, near Bear Camp, Kadiak Island.......... 85
Drawn by W. E. Spader from photograph by C. Hart Merriam.
Long Mountain, near Unalaska.......... 91
Drawn by W. E. Spader from photograph by W. B. Devereux.
Greek church, Unalaska.......... 91
Drawn by W. E. Spader from photograph by E. H. Harriman.
Sea-lions.......... 95
Drawn by Charles B. Hudson from photographs by H. D. Chichester.
Two-hatch bidarka.......... 96
Drawn by W. E. Spader from photograph by H. D. Chichester.
Little auks, or ‘choochkies’.......... 98
Drawn by W. E. Spader from photograph by H. D. Chichester.
Eskimo skin huts or ‘Topeks,’ Plover Bay, Siberia.......... 99
Drawn by S. B. Nichols from photograph by E. H. Harriman.
Group of Eskimo, Plover Bay.......... 101
Drawn by A. H. Baldwin from photograph by Curtis, July 11, 1899.
Unfinished Eskimo winter house, Plover Bay.......... 102
Drawn by A. H. Baldwin from photograph by Curtis, July 11, 1899.
Eskimo alongside ship in Umiaks, Port Clarence.......... 103
Drawn by Spader from photograph by C. Hart Merriam, July 12, 1899.
Eskimo man, woman, and child, Port Clarence.......... 104
Drawn by Baldwin from photograph by C. H. Merriam, July 12, 1899.
Tundra on south side of Port Clarence.......... 104
Drawn by W. E. Spader from photograph by C. Hart Merriam.
Eskimo children, Port Clarence.......... 105
Drawn by A. H. Baldwin from photograph by E. S. Curtis.
Young swans from St. Lawrence Island, Bering Sea.......... 108
Drawn by W. E. Spader from photograph by Leon J. Cole, July 13, 1899.
Rookery Rock, Hall Island, Bering Sea.......... 109
Drawn by W. E. Spader from photograph by E. S. Curtis.
Murres.......... 110
Drawn by W. E. Spader from photograph by H. D. Chichester.
Landing on St. Matthew Island, Bering Sea.......... 112
Drawn by Spader from photographs by Curtis and Merriam.
Cape Upright, St. Matthew Island.......... 113
Drawn by W. E. Spader from photograph by C. Hart Merriam.
Steam schooner ‘Dora’.......... 114
Drawn by W. E. Spader from photograph by C. Hart Merriam.
Deserted Indian village near Cape Fox.......... 116
Drawn by W. E. Spader from photograph by E. S. Curtis.

Totem poles, Deserted Village.. 117
Drawn by Louise M. Keeler from photograph by E. S. Curtis.

Chief's house, Deserted Village.. 117
Drawn by Orson Lowell from photograph by C. Hart Merriam.

Columbia Glacier, Prince William Sound.............................. 119
Drawn by W. E. Spader from photographs by C. Hart Merriam.

A hanging glacier, south side of Lynn Canal......................... 120
Drawn by Spader from photograph by C. H. Merriam, June 6, 1899.

Davidson Glacier, Lynn Canal, profile view.......................... 121
Drawn by Spader from photograph by C. Hart Merriam, June 6, 1899.

Davidson Glacier, Lynn Canal, front view............................ 121
Drawn by Spader from photograph by C. Hart Merriam, June 6, 1899.

Mt. St. Elias and Malaspina Glacier................................... 122
Drawn by A. H. Baldwin from photograph by I. C. Russell.

La Perouse Glacier, Fairweather Range.............................. 122
Drawn by W. E. Spader from photograph by E. S. Curtis, July 24, 1899.

Turner Glacier, Disenchantment Bay.................................. 123
Drawn by Spader from photograph by G. K. Gilbert, June 22, 1899.

Giant iceberg, Glacier Bay... 123
Drawn by Baldwin from photograph by G. K. Gilbert, June 12, 1899.

Mountains on Lynn Canal.. 124
Drawn by Charles B. Hudson from photograph by C. Hart Merriam.

Ice front of Muir Glacier.. 126
Drawn by Spader from photograph by G. K. Gilbert, June 10, 1899.

Surprise Glacier, Harriman Fiord...................................... 126
Drawn by Spader from photograph by Merriam, June 26, 1899.

Bryn Mawr and Harvard Glaciers, College Fiord..................... 127
Drawn by Louise M. Keeler from photograph by E. S. Curtis.

Our ship, the 'George W. Elder,' in Muir Inlet, Glacier Bay..... 128
Drawn by A. H. Baldwin from photograph by E. S. Curtis.

Large rock carried by Muir Glacier................................... 129
Drawn by Louise M. Keeler from photograph by Wesley R. Coe.

Nunatak Glacier, Russell Fiord.. 131
Drawn by Spader from photograph by E. S. Curtis, June 20, 1899.

Hemlock cliff, Harriman Fiord.. 132
Drawn by W. E. Spader from photograph by E. S. Curtis.

Columbia Glacier, seen through trees................................. 133
Drawn by Louise M. Keeler from photograph by G. K. Gilbert.

Ice wall of Columbia Glacier... 134
Drawn by Louise M. Keeler from photograph by G. K. Gilbert.

Gulls on floating ice.. 136
Drawn by W. E. Spader from photograph by W. H. Averell.

Indian carving.. 137
Drawn by Louise M. Keeler.

Halibut hook of Tlinkit Indians.. 137
Drawn by W. E. Spader.

Native women and children, Alert Bay, British Columbia......... 137
Drawn by Baldwin from photograph by Merriam, August, 1891.

Tlinkit dancing wand 138
Drawn by Louise M. Keeler.

Tlinkit dance rattle 139
Drawn by W. E. Spader.

Tlinkit halibut hook 139
Drawn by W. E. Spader.

Tlinkit canoe 140
Drawn by W. E. Spader from photograph by E. H. Harriman.

Hunya seal-hunters, Glacier Bay 141
Drawn by Louise M. Keeler from photograph by E. S. Curtis.

Carving of Tlinkit canoe 142
Drawn by Louise M. Keeler.

Tlinkit carved box 143
Drawn by Louise M. Keeler.

Tlinkit baskets 143
Drawn by Louise M. Keeler.

Tlinkit carving of beaver 144
Drawn by W. E. Spader.

Part of house frame, Alert Bay, British Columbia 144
Drawn by Louise M. Keeler from photograph by C. Hart Merriam, 1891.

Deserted Indian village, Cape Fox 145
Drawn by Louise M. Keeler from photograph by Charles A. Keeler.

Totem poles, deserted village, Cape Fox 146
Drawn by W. E. Spader from photograph by E. S. Curtis.

Bear totem pole, deserted village, Cape Fox 147
Drawn by Louise M. Keeler from photograph by E. S. Curtis.

Totem pole, Alert Bay, British Columbia 147
Drawn by Louise M. Keeler from photograph by C. Hart Merriam, 1891.

Totem poles, Wrangell 147
Drawn by A. H. Baldwin from photograph by E. S. Curtis.

Carved eagle roof-post, deserted village, Cape Fox 148
Drawn by A. H. Baldwin from photograph by C. Hart Merriam.

Carved bear roof-post, deserted village, Cape Fox 148
Drawn by A. H. Baldwin from photograph by C. Hart Merriam.

Totem pole, Wrangell 148
Drawn by A. H. Baldwin from photograph by U. S. Fish Commission.

Tlinkit sun mask from deserted village, Cape Fox 149
Drawn by W. E. Spader.

Tlinkit mask representing head of puffin 149
Drawn by W. E. Spader.

Tlinkit human head mask 149
Drawn by W. E. Spader.

Indian grave at Wrangell 150
Drawn by A. H. Baldwin from photograph by E. S. Curtis.

Graves of shamans, deserted village, Cape Fox 151
Drawn by Spader from photograph by E. S. Curtis, July 26, 1899.

Indian dead houses, Taku Harbor 152
Drawn by Louise M. Keeler from photograph by Merriam, June 6, 1899.

Town hall and church, New Metlakahtla.. 153
Drawn by W. E. Spader from photograph by E. S. Curtis, June, 1899.

New Metlakahtla.. 155
Drawn by W. E. Spader from photograph by G. K. Gilbert.

Double-headed dancing mask.. 156
Drawn by Charles B. Hudson.

Carved dish representing beaver.. 156
Drawn by Louise M. Keeler.

Carved meat tray (property of J. Stanley-Brown).......................... 156
Drawn by W. E. Spader.

Carved meat bowl, purchased from Chief Annahoots, Sitka........ 156
Drawn by Charles B. Hudson.

Tlinkit bone carving of head of bird, Sitka................................ 157
Drawn by W. E. Spader.

Tlinkit carving, Sitka.. 157
Drawn by W. E. Spader.

Indian carving 157
Drawn by Louise M. Keeler.

Painting on front of house of Chief Annahoots, Sitka................ 157
Drawn by Frances Wieser from photograph by E. S. Curtis.

Tlinkit shaman's headdress (property of J. Stanley-Brown)...... 158
Drawn by W. E. Spader.

Tlinkit shaman's rattle and staff (property of J. Stanley-Brown) 158
Drawn by W. E. Spader.

Tlinkit shaman's hat, Sitka (property of C. Hart Merriam)...... 158
Drawn by W. E. Spader.

Primitive bark hut, head of Yakutat Bay.................................... 159
Drawn by Louise M. Keeler from photograph by E. S. Curtis.

Tlinkit oil box.. 159
Drawn by W. E. Spader.

Woman flensing seal hide, Yakutat Bay...................................... 161
Drawn by Frances Wieser from photograph by W. B. Devereux.

Yakutat sealing canoe.. 162
Drawn by W. E. Spader from photograph.

Hunya seal hunters' huts of driftwood, near head of Glacier Bay.. 163
Drawn by Louise M. Keeler from photograph by Curtis, June 13, 1899.

Sealer's hut, showing seal skins on stretchers, Yakutat Bay........ 163
Drawn by Louise M. Keeler from photograph by Curtis, June 23, 1899.

Hunya seal hunter's camp, Glacier Bay.. 164
Drawn by W. E. Spader from photograph by Curtis, June 13, 1899.

Tlinkit death's-head carvings, Sitka.. 165
Drawn by W. E. Spader.

Eskimo mask 166
Drawn by Louise M. Keeler.

Eskimo feather mask.. 167
Drawn by Louise M. Keeler.

Bidara or Aleut skin boat, St. Paul Island, Bering Sea............... 168
Drawn by W. E. Spader from photograph by H. D. Chichester.

Barabara or native Aleut house at Unalaska 169
Drawn by A. H. Baldwin from photograph by E. S. Curtis.
Three-hatch bidarka 170
Drawn by W. E. Spader from photograph by H. D. Chichester.
Eskimo summer house and fireplace, Plover Bay, Siberia.......... 171
Drawn by W. E. Spader from photograph by E. S. Curtis.
Eskimo women and children, Plover Bay 171
Drawn by Baldwin from photograph by Curtis, July 11, 1899.
Part of Eskimo settlement, Plover Bay 172
Drawn by Nichols from photograph by E. H. Harriman, July 11, 1899.
Unfinished winter house, showing frame work of whale bones..... 173
Drawn by A. H. Baldwin from photograph by E. S. Curtis.
Winter house completely sodded but lacking roof, Plover Bay.... 173
Drawn by A. H. Baldwin from photograph by E. S. Curtis.
Eskimo man and woman, Plover Bay..................................... 174
Drawn by A. H. Baldwin from photograph by G. K. Gilbert.
Eskimo man and woman, Plover Bay..................................... 175
Drawn by W. E. Spader from photograph by W. B. Devereux.
Eskimo women, Plover Bay... 176
Drawn by W. E. Spader from photographs by E. S. Curtis.
Eskimo belle, Port Clarence.. 177
Drawn by Orson Lowell from photograph by E. S. Curtis.
Eskimo man, Plover Bay... 178
Drawn by W. E. Spader from photograph by W. B. Devereux.
Eskimo dish carved from vertebra of whale............................ 178
Drawn by Charles B. Hudson.
Eskimo umiak 179
Drawn by W. E. Spader from photograph by E. S. Curtis.
Eskimo kayak, Port Clarence... 179
Drawn by Baldwin from photograph by C. H. Merriam, July 12, 1899.
Eskimo woman, man, and child, Port Clarence 180
Drawn by Baldwin from photograph by C. H. Merriam, July 12, 1899.
Eskimo stone pipe, Port Clarence (purchased by C. Hart Merriam) 181
Drawn by John L. Ridgway.
Eskimo woman, Port Clarence (front and rear views of parka).. 182
Drawn by W. E. Spader from photographs by C. Hart Merriam.
Eskimo finger mask... 184
Drawn by Louise M. Keeler.
Baranof, first ruler of Russian America.................................. 193
Drawn by A. H. Baldwin from engraving.
Veniaminof, the apostle to the Aleuts.................................... 197
Drawn by A. H. Baldwin from photograph.
Wrangell, Russian governor of Alaska.................................... 200
Drawn by A. H. Baldwin from photograph.
Robert Kennicott, first American explorer of the Yukon............ 202
Drawn by A. H. Baldwin from photograph taken at Washington, D. C., in February, 1865.
Cormorants.. 234
Drawn by A. H. Baldwin from photograph by H. D. Chichester.

Forest near Sitka.... 248
Drawn by W. E. Spader from photograph by G. K. Gilbert.
Oil bag of sealskin, Yakutat Bay.... 256
Drawn by W. E. Spader from photograph by E. S. Curtis.
Tlinkit canoe.... 277
Drawn by W. E. Spader from photograph.
Fur-seals, St. Paul Island, Bering Sea.... 278
Drawn by C. B. Hudson from photograph by C. H. Merriam.
Black-footed albatrosses at rest on water.... 289
Drawn by W. E. Spader from photograph by C. Hart Merriam.
Tlinkit ray mask from deserted village, Cape Fox.... 290
Drawn by W. E. Spader.
Tebenkof's sketch of Bogoslof in 1832.... 296
Dall's sketch of Bogoslof in 1873.... 296
Bogoslof and Ship Rock from the southwest in 1873. (After Dall) 297
Old Bogoslof in 1884.... 297
Drawn by W. E. Spader from photograph by Lt. G. H. Doty.
Outline of Old Bogoslof in 1887.... 298
From rough sketch by W. C. Greenfield.
Old Bogoslof from west spit in 1891.... 298
Drawn by W. E. Spader from photograph by U. S. Fish Commission.
Old Bogoslof from east spit in 1895.... 299
Drawn by W. E. Spader from photographs by C. W. Purington.
End view of Bogoslof from southeast in 1873.... 300
Drawn by W. H. Dall.
Bogoslof from various bearings in 1873.... 300
Drawn by W. H. Dall.
Old and New Bogoslof from the southeast in 1890.... 301
Drawn by W. E. Spader from photograph by U. S. Fish Commission.
Old Bogoslof from pond on east spit, July, 1899.... 302
Drawn by W. E. Spader from photograph by E. S. Curtis.
The new and old volcanoes in 1890.... 302
Drawn by W. E. Spader from photograph by U. S. Fish Commission.
New Bogoslof soon after its upheaval in fall of 1883.... 304
Drawn by Prof. George Davidson.
Chart of Bogoslof in 1884.... 305
Drawn by Lt. J. C. Cantwell.
The new and old volcanoes and Ship Rock in 1884.... 306
Drawn by W. E. Spader from photograph by Lt. G. H. Doty.
New Bogoslof from the northwest.... 308
Drawn by W. E. Spader from sketch by Lt. J. C. Cantwell.
Lt. G. M. Stoney's chart of Bogoslof in May, 1884.... 310
Old and New Bogoslof in 1884.... 311
From sketch by Lt. G. M. Stoney.
Sketch of Bogoslof Islands and Ship Rock in 1887.... 312
By W. C. Greenfield.
The new volcano from the west spit of Old Bogoslof in 1891.... 314
Drawn by W. E. Spader from photograph by U. S. Fish Commission.

Sketch map of Bogoslof Islands in 1891 315
By C. Hart Merriam.
Northwest corner of New Bogoslof, August 11, 1891 315
Drawn by W. E. Spader from photograph by C. Hart Merriam.
In the steam, New Bogoslof, August 11, 1891 316
Drawn by W. E. Spader from photograph by U. S. Fish Commission.
Summit ridge of New Bogoslof, August 11, 1891 317
Drawn by W. E. Spader from photograph by U. S. Fish Commission.
Old Bogoslof from New Bogoslof in 1895 318
Drawn by W. E. Spader from photograph by C. W. Purington.
New Bogoslof in 1895, showing flattened top 318
Drawn by W. E. Spader from photograph by C. W. Purington.
Part of west side of New Bogoslof in 1895 319
Drawn by W. E. Spader from photograph by C. W. Purington.
New and Old Bogoslof from the northwest in 1897 319
Drawn by W. E. Spader from photograph by Dr. Leonhard Stejneger.
The islands from the northeast in 1897 320
Drawn by W. E. Spader from photograph by Dr. Leonhard Stejneger.
The islands July 8, 1899, from the east 320
Drawn by W. E. Spader from photograph by W. B. Devereux.
Krusenstern's chart, published in 1826 321
Old Bogoslof showing long west spit, in 1891 324
Drawn by W. E. Spader from photograph by C. Hart Merriam.
Dall's sketch map showing bars in 1895 325
Murres 329
Drawn by Charles B. Hudson from photograph.
Murres' eggs 330
Drawn by A. H. Baldwin from photograph by H. D. Chichester.
Sea-lions 333
Woodcut by L. S. Williams from photograph by H. D. Chichester.
Salmon wheel, Columbia River 337
Drawn by W. E. Spader from photograph by Wesley R. Coe.
Salmon drying by Aleuts at Unalaska 338
Drawn by C. B. Hudson from photograph by U. S. Fish Commission.
Aleut's salmon drying camp at Unalaska 344
Drawn by C. B. Hudson from photograph by U. S. Fish Commission.
Salmon barricade 346
Drawn by C. B. Hudson from photograph by U. S. Fish Commission.
Camp of Aleut salmon fishermen, Kadiak Island 349
Drawn by C. B. Hudson from photograph by U. S. Fish Commission.
Salmon drying by natives on Aleutian Islands 353
Drawn by C. B. Hudson from photograph by U. S. Fish Commission.
Jaeger on wing 355
Drawn by L. A. Fuertes.
Harem of fur-seals, Pribilof Islands, Bering Sea 356
Drawn by C. B. Hudson from photographs.
Blue foxes on fox farm 358
Drawn by W. E. Spader from photograph.

Fox farm on Long Island, near Kadiak.................................. 360
Drawn by W. E. Spader from photograph by E. S. Curtis.
Fox cage-traps on Long Island fox farm................................ 362
Drawn by W. E. Spader from photograph by C. Hart Merriam.
Eskimo dancing finger mask 366
Drawn by Louise M. Keeler.
Eskimo "recounting the ancient legends".............................. 368
Drawn by Charles B. Hudson.
"There is one sits by in silence, with terror in her eyes"........... 368
Drawn by W. E. Spader.
"The well-filled bowl cheers every soul".............................. 369
Drawn by W. E. Spader.
"Afar in the buoyant umiak" 369
Drawn by W. E. Spader.
"As she runs on the sand of the Arctic strand"....................... 370
Drawn by W. E. Spader.
Mermaid and seal—tailpiece... 370
Drawn by F. W. Ramsdell.

MAPS

Prepared under the direction of Henry Gannett.

Route map of Alaska..front of book
Route map of United States...front of book
Map of Yakutat Bay.. 55
Map of Port Wells, Prince William Sound............................. 66
Map showing forested areas, by B. E. Fernow....................... 235

PREFACE

The expedition, the results of which are recorded in these volumes, was originally planned as a summer cruise for the pleasure and recreation of my family and a few friends. It was intended to extend along the Alaska coast only as far as Kadiak Island, my attention having been directed to that place by a chance conversation with Mr. D. G. Elliot, who especially interested me in the opportunities there offered for hunting the Kadiak bear, said to be the largest in the world.

Dr. Lewis R. Morris, our friend and physician, aided me in gathering much of the information necessary for arranging and finally determining our plans. The steamer 'George W. Elder' was obtained and outfitted under the direction of President A. L. Mohler of the Oregon Railroad and Navigation Company. Our comfort and safety required a large vessel and crew, and preparations for the voyage were consequently on a scale disproportionate to the size of the party. We decided, therefore, if opportunity offered, to include some guests who, while adding to the interest and pleasure of the expedition, would gather useful information and distribute it for the benefit of others.

With this end in view, Dr. Morris and I went to Washington in March, 1899, to confer with Dr. C. Hart Merriam. From him we received valuable advice and assistance in planning the research work and in selecting the scientific personnel of the party. With two such associates, there was much pleasure and recreation in working out the details of the expedition, and almost imperceptibly its scope expanded and its membership grew. Many of the invited members were connected with the Washington Academy of Sciences, and the interest shown by them soon came to be shared by that organization, which gave its hearty cooperation; under its auspices the scientific results are now being published.

Although big game played an important part in the original plan, no extended or organized effort for hunting was made, the sportsmen unselfishly foregoing their own pleasure and allowing the scientific workers to use their camp equipment. Much valuable time was thus saved and we were enabled to extend the cruise to the Seal and other islands of Bering Sea and also to the coast of Siberia and Bering Strait.

The long voyage, made often in the midst of fog, through imperfectly charted waters, and along a treacherous coast unguarded by lighthouses or danger signals, was accomplished in safety and without serious accident. This was mainly due to the skillful navigation of Captain Doran, assisted by First Officer McCarty, while the comfort of the party was well cared for under the direction of Steward Knights. My appreciation of the efforts of these officers is shared, I am sure, by all the members of the expedition.

Acknowledgments are due to the officials of the many transportation lines over which we passed, especially those of the White Pass and Yukon Railroad, for courtesies so generously extended during various stages of the journey; and also to Captain Humphrey of the Pacific Steam Whaling Company; to Mr. Washburn of the Alaska Commercial Company at Kadiak, and to Mr. Stanley-Brown on behalf of the North American Commercial Company at Dutch Harbor. These several gentlemen made welcome additions to the ship's company during portions of the trip. Of the many hospitalities extended to us, none will be more pleasantly remembered than those of Governor and Mrs. Brady at Sitka.

It is pleasant to recall the spirit of harmony and good fellowship which prevailed throughout the voyage, and to remember that whether in the field of research or in the line of service, all showed a willingness to cheerfully carry out the duties which fell to their lot. Through this spirit, manifested from the very beginning, every member of the party contributed to the success of the expedition, and to each one my family and I wish to acknowledge the pleasure derived from our association during the voyage.

The arrangements for publication were placed in Dr. Merriam's hands and to this work he has given all his leisure since the return of the expedition. Whatever excellence has been achieved through editorial treatment of text and illustration is the result of his labors. It is hoped that the volumes embodying the results of the expedition will afford pleasure and instruction, and that the scientific material — the product of much faithful research by members of the expedition and others entrusted with the study of the collections — will prove useful contributions to the knowledge of the subjects treated.

EDWARD H. HARRIMAN.

INTRODUCTION

In the early spring of 1899 Mr. Edward H. Harriman of New York, in cooperation with the Washington Academy of Sciences but entirely at his own expense, organized an expedition to Alaska. He invited as his guests three artists and twenty-five men of science, representing various branches of research and including well known professors in universities on both sides of the continent, and leaders in several branches of Government scientific work. Those from the east left New York by special train May 23, 1899; those from the far west joined the party at Portland and Seattle a week later. In crossing the continent side trips were made to Shoshone Falls, Boise City, and Lewiston, Idaho. At Lewiston the party was met by a special steamer and conveyed down the canyon of Snake River to its mouth in the Columbia, where the train was in waiting.

The Expedition sailed from Seattle May 30, on the steamship 'Geo. W. Elder,' especially chartered for the purpose, and was gone just two months. From Puget Sound to Juneau and Lynn Canal the vessel threaded her way northward among the forested islands and fiords of the 'inside passages'; at Sitka she entered the open ocean and took a northwesterly course in front of the stupendous glaciers and snow-capped peaks of the Fairweather and St. Elias ranges; at Cook Inlet she changed her course from northwest to southwest and skirted the Alaska Peninsula and Aleutian Islands, touching the emerald shores of Kadiak and the Shumagins; at Unalaska she again turned her prow northward, entered the troubled waters and treacherous fogs of Bering Sea, called at Bogoslof Volcano, the Pribilof or Fur-Seal Islands, and the islands of Hall, St. Matthew, and St. Lawrence; and finally, after visiting Eskimo settlements on both the Asiatic and American coasts, and peering poleward through Bering Strait — the gateway to the Arctic — she put about and began the homeward voyage.

On the northward voyage the Colonial Museum at Victoria, Vancouver Island, was visited, and a side trip was made from Skagway, at the head of Lynn Canal, to the summit of White Pass, by way of the newly constructed White Pass and Yukon railroad, whose officials courteously placed a special train at our disposal.

During the two months' cruise a distance of nine thousand miles was traversed. Frequent landings were made, and, no matter how brief, were utilized by the artists, photographers, geologists, botanists, zoologists, and students of glaciers. From time to time longer stops were made and camping parties were put ashore that more thorough work might be done. Thus one or more camping parties operated at Glacier Bay, Yakutat Bay, Prince William Sound, Kadiak Island, the Alaska Peninsula, and the Shumagin Islands. Large and important collections were made, including series of the small mammals and birds of the coast region, enormous numbers of marine animals and seaweeds, and by far the largest collections of insects and land plants ever brought from Alaska. There were also small collections of fossil shells and fossil plants. In working up this material the services of more than fifty specialists have been secured, and although the task is by no means finished, thirteen genera and nearly six hundred species new to science have been already discovered and described. The natural history specimens have not merely enriched our museums, they have increased many fold our knowledge of the fauna and flora of Alaska.

Native settlements were visited at various places — of Indians along the southwest coast from British Columbia to Yakutat Bay, of Eskimo and Aleuts from Prince William Sound northward and westward. The shortness of the stops precluded serious ethnological studies; still numerous articles of interest were secured, and a series of photographs of permanent value was obtained. Among the latter, those showing the camps of Indian seal-hunters in Glacier and Yakutat Bays, and those of the Eskimo settlement at Plover Bay, Siberia, are worthy of special mention. These Eskimo were living in primitive fashion, clad in furs and dwelling in skin huts or topeks.

A number of glaciers not previously known, as well as many others which had been vaguely or imperfectly known, were mapped, photographed, and described, and much evidence was gathered of changes that have occurred in their length and size. In many instances it was possible to compare their condition and extent in 1899 with earlier records, so as to discover and measure the changes; and in all cases their relations to neighboring features were photographed or otherwise recorded, so that future changes may be readily determined. In Prince William Sound a new fiord fifteen miles in length and abounding in glaciers was discovered, photographed, and mapped. Its entrance, hidden by the huge projecting front of the Barry Glacier, was disclosed by accident while we were attempting to photograph the land attachments of the glacier. In honor of the Expedition it was named Harriman Fiord.

Owing to the great distances covered and the necessarily short time allowed for stops little hunting was done. Nevertheless two hunting parties were landed at Kadiak Island, where Mr. Harriman had the good fortune to kill a Kadiak bear, the only one secured by the Expedition and the first ever measured and photographed in the flesh.

In a voyage of this character, where many and diverse interests are involved, where numerous stops at widely separated localities must be made, and where great distances must be covered in the shortest practicable time, success or failure depends on the capacity of the leader, the efficiency of the organization, the perfection of the equipment, and the enthusiasm, training, and cooperative spirit of the individual members. That so much was accomplished is sufficient evidence as to the way these conditions were fulfilled.

The day after leaving New York Mr. Harriman called together the members of the Expedition and announced that it was not his desire to dictate the route to be followed, or to control the details of the work. In accordance with his wishes a business organization was effected, comprising an executive committee, a committee on route and plans, and special committees on the various scientific activities. These committees, throughout the voyage, held frequent meetings and determined from day to day the operations of the Expedition.

Another factor which contributed materially to the results was the length of the days and lightness of the nights in northern latitudes, permitting work on shore during the greater part of the night. Some of the stops where important collecting was done, as at Taku Harbor and Hall Island, were made in the night, the vessel leaving before daylight.

Among the unusual features which contributed to the success of the Expedition, three are worthy of special mention:

(1) The ship had no business other than to convey the party whithersoever it desired to go. Her route was entrusted to a committee comprising the heads of the various departments of research; so that from day to day and hour to hour her movements were made to subserve the interests of the scientific work.

(2) The scientific staff represented varied interests and was made up of men trained in special lines of research.

(3) The equipment was comprehensive, including naphtha launches, small boats and canoes, camping outfits, stenographers, photographers, and extra men for oarsmen and helpers, thereby reducing to a minimum the time necessary to accomplish material results. The naphtha launches were of the utmost service, landing large parties quickly and safely, and conveying men and supplies to remote points out of reach of the ship. It is safe to say that through their agency the opportunities and results were doubled.

A library of five hundred volumes, provided by Mr. and Mrs. Harriman and supplemented by the various members of the expedition, was conveniently arranged in the main cabin within reach of all. It included most of the more important and useful works relating to Alaska and proved of great service. A complete series of charts of Alaska, provided by Dr. Henry S. Pritchett, Superintendent of the U. S. Coast and Geodetic Survey, was constantly in use in the chart room. Nearly every evening an informal lecture or talk on some subject connected with the work of the Expedition, and illustrated by blackboard sketches, was given in the main cabin.

The Expedition was favored with unusually fine weather, so that on either the outward or the return voyage practically all parts of the coast from Puget Sound to Unalaska, including the splendid peaks of the St. Elias and Fairweather ranges and the great mountains of the Alaska Peninsula, were clearly seen from the steamer.

The large number of photographs taken by the professional photographers on board was materially increased by cameras belonging to various members of the Expedition, and in all not less than five thousand photographs were secured. These cover many parts of the coast region from British Columbia to Bering Strait, and constitute incomparably the best series of pictures of the region thus far obtained. Nevertheless, certain objects of importance escaped, and in selecting the illustrations for the reports of the Expedition an attempt has been made to fill the gaps as far as possible by borrowing from others. The use of photographic material for reproduction has been granted by the U. S. Coast and Geodetic Survey, the U. S. Geological Survey, the U. S. Fish Commission, the U. S. Revenue Marine Service, Lieutenant G. H. Doty, and Mr. Harry D. Chichester, to all of whom the thanks of the Expedition are due. Some of the best pictures of fur-seals, sea-lions, and murres are from Mr. Chichester's negatives, which, in view of the climatic obstacles to successful photography in Bering Sea, are of unusual merit.

The text figures are from line drawings made either from photographs, or, in the case of Indian and Eskimo articles, directly from the objects. The larger number of the drawings are by W. E. Spader of New York, and Louise M. Keeler of California.

The colored illustrations have been derived from four sources: landscape and glacier paintings by R. Swain Gifford and Fred S. Dellenbaugh; paintings of birds from living or flesh specimens by Louis Agassiz Fuertes; paintings of flowers by Frederick A. Walpole, and paintings of the Kadiak bear and fox by Charles R. Knight. Mr. Gifford, Mr. Dellenbaugh, and Mr. Fuertes were members of the Expedition and made their sketches, and in many cases their finished paintings, in the field. Mr. Walpole, through the cooperation of Mr. Harriman and the Division of Botany of the United States Department of Agriculture, was sent to Alaska the following year (1900) for the special purpose of securing drawings and paintings of Alaska plants.

The maps have been prepared under the direction of Mr. Henry Gannett, Chief Geographer, United States Geological Survey.

The first and second volumes contain the narrative of the Expedition and a few papers on subjects believed to be of general interest. The technical matter, in the fields of geology, paleontology, zoology, and botany, will follow in a series of illustrated volumes. Twenty-two special papers, based on collections made by the Expedition, have been already published in the Proceedings of the Washington Academy of Sciences and others will follow. All of this material will be brought together in the volumes of the technical series.

Lists of the members and committees of the Expedition and of the officers and crew of the vessel are appended.

The labor of editing and seeing through the press the material contained in the present volume, and of selecting subjects for illustration and securing their proper reproduction, has occupied practically all the time of the editor outside of his official duties, since the return of the Expedition nearly two years ago.

C. HART MERRIAM,
Editor.

WASHINGTON, D. C.,
June 15, 1901.

MEMBERS OF THE HARRIMAN ALASKA EXPEDITION.

CLASSIFIED SUMMARY.

Harriman family and servants	14
Scientific party	25
Artists	3
Photographers	2
Stenographers	2
Surgeon and assistant	2
Trained nurse	1
Chaplain	1
Hunters, packers, and camp hands	11
Officers and crew	65
	126

THE HARRIMAN FAMILY.

Edward H. Harriman, patron of the expedition, Arden, N. Y.
Mrs. E. H. Harriman.
Miss Mary Harriman.
Miss Cornelia Harriman.
Carol Harriman.
Averell Harriman.
Roland Harriman.
W. H. Averell, Rochester, New York.
Mrs. W. H. Averell.
Miss Elizabeth Averell.
Miss Dorothea Draper, New York City.

THE SCIENTIFIC PARTY.

Prof. William H. Brewer, Sheffield Scientific School, Yale University, New Haven, Conn.

John Burroughs, Ornithologist and Author, West Park, N. Y.

Wesley R. Coe, Ph.D., Assistant Professor of Comparative Anatomy, Yale University, New Haven, Conn.

Frederick V. Coville, Curator of the National Herbarium and Botanist of the U. S. Department of Agriculture, Washington, D. C.

Dr. WILLIAM H. DALL, Paleontologist of the U. S. Geological Survey, and Honorary Curator of Mollusks, U. S. National Museum, Washington, D. C.

W. B. DEVEREUX, Mining Engineer, Glenwood Springs, Colo.

DANIEL G. ELLIOT, Curator of Zoology, Field Columbian Museum, Chicago, Ill.

Prof. BENJAMIN K. EMERSON, Professor of Geology, Amherst College, Amherst, Mass.

Prof. B. E. FERNOW, Dean of the School of Forestry, Cornell University, Ithaca, N. Y.

Dr. A. K. FISHER, Ornithologist, Biological Survey, U. S. Department of Agriculture, Washington, D. C.

HENRY GANNETT, Chief Geographer, U. S. Geological Survey, Washington, D. C.

G. K. GILBERT, Geologist, U. S. Geological Survey, Washington, D. C.

Dr. GEORGE BIRD GRINNELL, Editor Forest and Stream, New York City.

THOMAS H. KEARNEY, JR., Assistant Botanist, U. S. Department of Agriculture, Washington, D. C.

CHARLES A. KEELER, Director of the Museum of the California Academy of Sciences, San Francisco, Calif.

Prof. TREVOR KINCAID, Professor of Zoology, University of Washington, Seattle, State of Washington.

Dr. C. HART MERRIAM, Chief of the Biological Survey, U. S. Department of Agriculture, Washington, D. C.

JOHN MUIR, Author and Student of Glaciers, Martinez, Calif.

Dr. CHARLES PALACHE, Mineralogist, Harvard University, Cambridge, Mass.

ROBERT RIDGWAY, Curator of Birds, U. S. National Museum, Washington, D. C.

Prof. WILLIAM E. RITTER, President of the California Academy of Sciences and Professor of Zoology in the University of California, Berkeley, Calif.

DE ALTON SAUNDERS, Botanist, South Dakota Experiment Station, Brookings, South Dakota.

Dr. WILLIAM TRELEASE, Director of the Missouri Botanical Garden, St. Louis, Mo.

ARTISTS.

R. SWAIN GIFFORD, New York City.

FRED S. DELLENBAUGH, New York City.

BIRD ARTIST.

Louis Agassiz Fuertes, Ithaca, N. Y.

PHYSICIANS.

Dr. Lewis Rutherford Morris, New York City.
Dr. Edward L. Trudeau, Jr., Saranac Lake, N. Y.

TAXIDERMISTS AND PREPARATORS.

Leon J. Cole, Ann Arbor, Michigan.
Edwin C. Starks, Biological Survey, Washington, D. C.

PHOTOGRAPHERS.

Edward S. Curtis, Seattle, Wash.
D. G. Inverarity, Seattle, Wash.

CHAPLAIN.

Dr. George F. Nelson, New York City.

STENOGRAPHERS.

Louis F. Timmerman, New York City.
Julian L. Johns, Washington, D. C.

SHIP'S OFFICERS

Captain, Peter Doran.
First Officer, Charles McCarty.
Pilot, J. F. Jordan.
Chief Engineer, J. A. Scandrett.
Steward, Joseph V. Knights.

At Orca, Prince William Sound, Capt. Omar J. Humphrey of the Pacific Steam Whaling Company joined the ship and accompanied the party to Bering Strait and back to Unalaska. His detailed knowledge of the coast proved of much value in navigating the ship. Mr. M. L. Washburn of the Alaska Commercial Company also joined the Expedition at Orca and went with it to Kadiak. On the return voyage Mr. J. Stanley-Brown of the North American Commercial Company came aboard at Dutch Harbor, Unalaska, and accompanied the party on the homeward voyage and the overland journey.

COMMITTEES.

On the westward journey across the continent an organization was perfected, and the various activities of the Expedition were assigned to special committees, as follows:

Executive Committee.

E. H. Harriman, *Chairman*
C. Hart Merriam, *Secretary*
Frederick V. Coville
Edward S. Curtis
Wm. H. Dall
W. B. Devereux
Bernhard E. Fernow
Henry Gannett
G. K. Gilbert
George Bird Grinnell
Lewis R. Morris
John Muir

Committee on Route and Plans.

E. H. Harriman, *Chairman*
C. Hart Merriam, *Secretary*
Frederick V. Coville
Wm. H. Dall
W. B. Devereux
Captain Peter Doran
Henry Gannett
G. K. Gilbert
Lewis R. Morris

Committee on Zoology.

Wm. H. Dall, *Chairman*
Daniel G. Elliot
C. Hart Merriam
Robert Ridgway
Wm. E. Ritter

Committee on Botany.

F. V. Coville, *Chairman*
Wm. H. Brewer
Wm. Trelease

Committee on Geology.

G. K. Gilbert, *Chairman*
B. K. Emerson
John Muir

Committee on Mining.

W. B. Devereux, *Chairman*
Charles Palache

Committee on Geography and Geographic Names.

Henry Gannett, *Chairman*
Wm. H. Dall
B. K. Emerson
G. K. Gilbert
John Muir

Committee on Big Game.

Lewis R. Morris, *Chairman*
Daniel G. Elliot
George Bird Grinnell
Miss Mary Harriman

Committee on Lectures.

Henry Gannett, *Chairman*
Wm. H. Brewer
Frederick V. Coville
G. K. Gilbert
George F. Nelson

Committee on Library.

Mrs. Averell, *Chairman*
Miss Harriman, *Secretary*
Frederick V. Coville
Miss Draper
Miss Cornelia Harriman
E. L. Trudeau

Committee on Literature and Art.

Mrs. Harriman, *Chairman*
G. F. Nelson, *Secretary*
John Burroughs, *Historian*
Miss Averell
Fred S. Dellenbaugh
Louis A. Fuertes
R. Swain Gifford
Miss Cornelia Harriman
John Muir

Committee on Music and Entertainment.

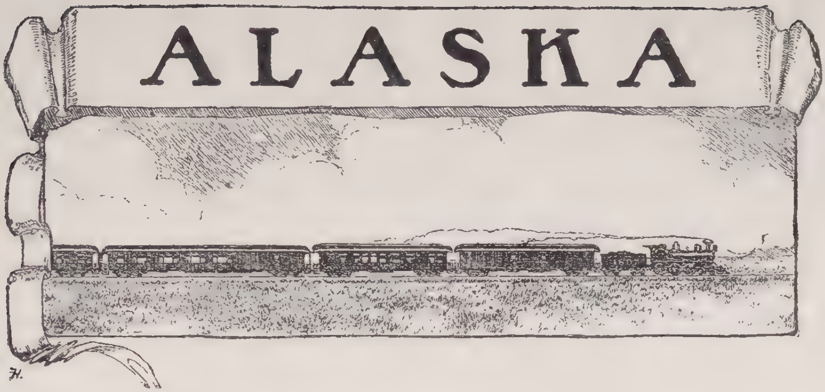
B. E. Fernow, *Chairman*
Miss Draper, *Secretary*
Fred S. Dellenbaugh
Louis A. Fuertes
R. Swain Gifford

ALASKA

Fiords of the far west shore, where peaks sublime
   Are cloudward thrust 'neath folds of glistening snow,
   With hoar and frigid streams that tideward flow,
Sculpturing their cliffs and crags which mount and climb
Full in the sight of heaven — grim heirs of time,
   Stern children of eternity, that grow
   Austere and terrible 'mid storms that blow
Their lusty trumpets in the tempest's prime.
What joy is this to float upon thy tide,
So blue, so beautiful, to gently glide
   'Mid islets forested, past shores that stand,
   Dark portals opening to enchantment's land,
Where all is but a dream, soon to be
Lost in the purple mist of memory.

CHARLES KEELER.

PRINCE WILLIAM SOUND,
June 28, 1899.



NARRATIVE OF THE EXPEDITION

BY JOHN BURROUGHS

WE left New York on the afternoon of May 23, 1899, in a special train of palace cars, and took ship at Seattle the last day of the month. All west of the Mississippi was new land to me, and there was a good deal of it. Throughout the prairie region I, as a farmer, rejoiced in the endless vistas of beautiful fertile farms, all busy with the spring planting, and reaching from horizon to horizon of our flying train. As a home-body and lover of the cosy and picturesque I recoiled from the bald native farm houses with their unkempt surroundings, their rude sheds and black muddy barnyards. As one goes West nature is more and more and man less and less. In New England one is surprised to see such busy thriving towns and such inviting country homes amid a landscape so bleak and barren. In the West on the contrary his surprise is that such opulence of nature should be attended by such squalor and makeshift in the farm buildings and rural villages. Of course the picturesque is not an element of the western landscape as it is of the eastern. The predominant impression is that of utility. Its beauty is the beauty of utility. One does not say, what a beautiful view, but what beautiful farms ; not what an attractive home, but what a superb field of corn or wheat, or oats or barley. The crops and the herds suggest a bounty and a fertility that are marvelous, but the habitations for the most part look starved and impoverished. The country roads are merely dusty or muddy black bands, stretching across the open land without variety and without interest. As one's eye grows fatigued with the monotony, the thought comes to him of what terrible homesickness the first settlers on the prairies from New England, New York, or Pennsylvania must have suffered. Their hearts did not take root here. They did not build themselves homes, they builded themselves shelters. Their descendants are trying here and there to build homes, trying by tree planting and other devices to give an air of seclusion and domesticity to their dwellings. But the problem is a hard one. Nature here seems to covet the utmost publicity. The people must build lower and more rambling houses, cultivate more grassy lanes, plant longer avenues of trees, and not let the disheveled straw stacks dominate the scene. As children we loved to sit on the laps of our fathers and mothers, and as children of a larger and older growth we love the lap of mother earth, some secluded nook, some cosy corner, where we can nestle and feel the sheltering arm of the near horizon about us.

After one reaches the more arid regions beyond the Rockies, what pitiful farm homes one sees here and there — a low one-room building made of hewn logs, the joints plastered with mud, a flat mud roof, a forlorn looking woman with children about her standing in the doorway, a rude canopy of brush or cornstalks upheld by poles for shed and outbuildings; not a tree, not a shrub near; a few acres of green irrigated land not far off, but the hills and mountains around, bare, brown, and forbidding. We saw hundreds of such homes in Utah, Idaho, and Oregon, and they affected me like a nightmare.

A night's run west of Omaha a change comes over the spirit of nature's dream. We have entered upon that sea of vast rolling plains; agriculture is left behind; these gentle slopes and dimpled valleys are innocent of the plow; herds of grazing cattle and horses are seen here and there; now and then a coyote trots away indifferently from the train, looking like a gray homeless kill-sheep shepherd dog; at long intervals a low hut or cabin, looking very forlorn; sometimes a wagon track leads away and disappears over the treeless hills. How I wanted to stop the train and run out over those vast grassy billows and touch and taste this unfamiliar nature! Here in the early morning I heard my first western meadow-lark. The liquid gurgling song filtered in through the roar of the rushing train. It was very sweet and novel and made me want more than ever to call a halt and gain the wild stillness of the hills and plains, but it contained no suggestion of the meadow-lark I knew. I saw also the horned lark and the black and white lark-bunting from the car window.

Presently another change comes over the scene: We see the Rockies faint and shadowy in the far distance, their snow-clad summits ghostly and dim; the traveler crosses them on the Union Pacific almost before he is aware of it. He expects a nearer view, but does not get it. Their distant snow-capped peaks rise up, or bow down, or ride slowly along the horizon afar off. They seem to elude him; he cannot get near them; they flee away or cautiously work around him. At one point we seemed for hours approaching the Elk Mountains, which stood up sharp and white against the horizon; but a spell was upon us, or upon them, for we circled and circled till we left them behind. A vast treeless country is a strange spectacle to eastern eyes. This absence of trees seems in some way to add to the youthfulness of the landscape; it is like the face of a beardless boy. Trees and forests make the earth look as if it had attained its majority; they give a touch like that of the mane to the lion or the beard to the man.

In crossing the continent this youthfulness of the land, or even its femininity, is at times a marked feature. The face of the plains in Wyoming suggests our eastern meadows in early spring — the light gray of the stubble, with a tinge of green beneath. All the lines are gentle, all the tints are soft. The land looks as if it must have fattened innumerable herds. Probably the myriads of buffaloes grazing here for centuries have left their mark upon it. The hills are almost as plump and muttony in places as the South Downs of England.

I recall a fine spectacle on the Laramie plains: a vast green area, miles and miles in extent, dotted with thousands of cattle, one of the finest rural pictures I ever saw. It looked like an olive green velvet carpet, so soft and pleasing was it to the eye, and the cattle were disposed singly or in groups as an artist would have placed them. Rising up behind it and finishing the picture was a jagged line of snow-covered mountains. Presently the sagebrush takes the place of grass and another change occurs; still the lines of the landscape are flowing and the tints soft. The sagebrush is like the sage of the garden become woody and aspiring to be a bush three or four feet high. It is the nearest nature comes to the arboreal beard on these great elevated plains. Shave them away and the earth beneath is as smooth as a boy's cheek.

Before we get out of Wyoming this youthfulness of nature gives place to mere newness—raw, turbulent, forbidding, almost chaotic. The landscape suggests the dumping ground of creation, where all the refuse has been gathered. What one sees at home in a clay bank by the roadside on a scale of a few feet, he sees here on a scale of hundreds and thousands of feet — the erosions and the sculpturing of a continent, vast, titanic; mountain ranges, like newly piled earth from some globe-piercing mine shaft, all furrowed and carved by the elements, as if in yesterday's rainfall. It all has a new, transitory look. Buttes or table mountains stand up here and there like huge earth stumps.

GREEN RIVER BUTTE, WYOMING.

Along Green River we see where nature begins to dream of the great canyon of the Colorado. Throughout a vast stretch of country here her one thought seems to be of canyons. You see them on every hand, little and big — deep, rectangular grooves sunk in the plain, sides perpendicular, bottom level, all the lines sharp and abrupt. All the little dry water courses are canyons, the depth and breadth being about equal; the streams have no banks, only perpendicular walls.

As you go south these features become more and more pronounced till you reach the stupendous canyon of the Colorado in Arizona. On our return in August we struck this formation in the Bad Lands of Utah, where our train was stalled a day and a half by a washout. The earth seems to have been flayed alive in the Bad Lands, no skin or turf of verdure or vegetable mould anywhere, all raw and quivering. The country looks as if it might have been the site of enormous brickyards; over hundreds of square miles the clay seems to have been used up to the depth of fifty or a hundred feet, leaving a clay floor much worn and grooved by the elements. The mountains have been carved and sliced but yesterday, showing enormous transverse sections. Indeed, never before have I seen the earth so vivisected, anatomized, gashed — the cuts all looking fresh, the hills looking as new and red as butcher's meat, the strata almost bleeding. The red and angry torrent of Price River, a mountain brook of liquid mud near which we lay, was quite in keeping with the scene. How staid and settled and old nature looks in the Atlantic States, with her clear streams, her rounded hills, her forests, her lichen-covered rocks, her neutral tints, in contrast with large sections of the Rocky Mountain region. In the East the great god Erosion has almost done his work — the grading and shaping of the landscape has long since been finished, the seeding and planting are things of the remote past — but in this part of the West it is still the heat of the day with him; we surprise his forces with shovels and picks yet in hand, as it were, and the spectacle is strange indeed and in many ways repellent. In places the country looks as if all the railroad forces of the world might have been turned loose to delve and rend and pile in some mad, insane folly and debauch.

In crossing the Rockies I had my first ride upon the cowcatcher, or rather upon the bench of the engine immediately above it. In this position one gets a much more vivid sense of the perils that encompass the flying train than he does from the car window. The book of fate is rapidly laid bare before him and he can scan every line, while from his comfortable seat in the car he sees little more than the margin of the page. From the engine he reads the future and the immediate. From the car window he is more occupied with the distant and the past. How rapidly those two slender steel rails do spin beneath us, and how inadequate they do seem to sustain and guide this enormous throbbing and roaring monster which we feel laboring and panting at our backs. The

rails seem ridiculously small and slender for such task; surely, you feel, they will bend and crumple up or be torn from the ties. The peril seems imminent and it is some time before one gets over the feeling. During this ride of twenty-five miles we struck two birds — shore larks — and barely missed several turtle doves. A big hawk sat on the ground near the track eating some small animal, probably a ground squirrel. He was startled by our sudden approach and in flying across the track came so near being struck by the engine that he was frightened into dropping his quarry. Later in the day others of the party rode upon the front of the engine and each saw birds struck and killed by it. The one ever-present bird across the continent, even in the most desolate places, is the turtle dove. From Indiana to Oregon, at almost any moment turtle doves may be seen flying away from the train.

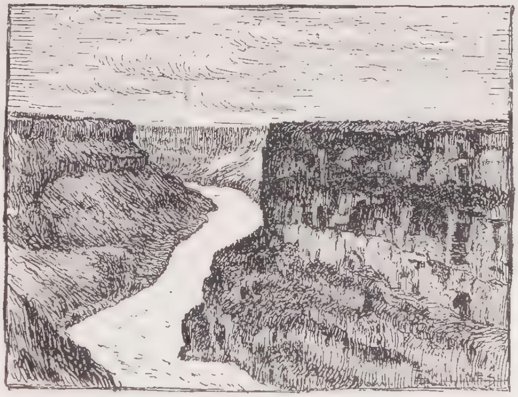
SHOSHONE FALLS AND CANYON.

The fourth day from home we struck the great plains of the Snake River in southern Idaho and stopped at Shoshone to visit the Shoshone Falls.

Mr. Harriman had telegraphed ahead to have means of transportation in readiness to take us to the falls, twenty-five miles to the south across the sagebrush plains. Hence when we awoke at Shoshone in the early morning we found a nondescript collection of horses and vehicles awaiting us — buggies, buckboards, market wagons, and one old covered four-horse stage, besides a group of saddle horses for those who were equal to this mode of travel. The day was clear and cool and the spirits of the party ran high. That ride over the vast sagebrush plain in the exhilarating air, under the novel conditions and in the early honeymoon of our journey — who of us can ever forget it? My seat happened to be beside the driver on top of the old stage-coach, and we went swinging and rocking over the plain in the style in which I made my first journey amid the Catskills in my youth. But how tame were the Catskills of memory in comparison with the snow-capped ranges

SAGEBRUSH PLAIN.

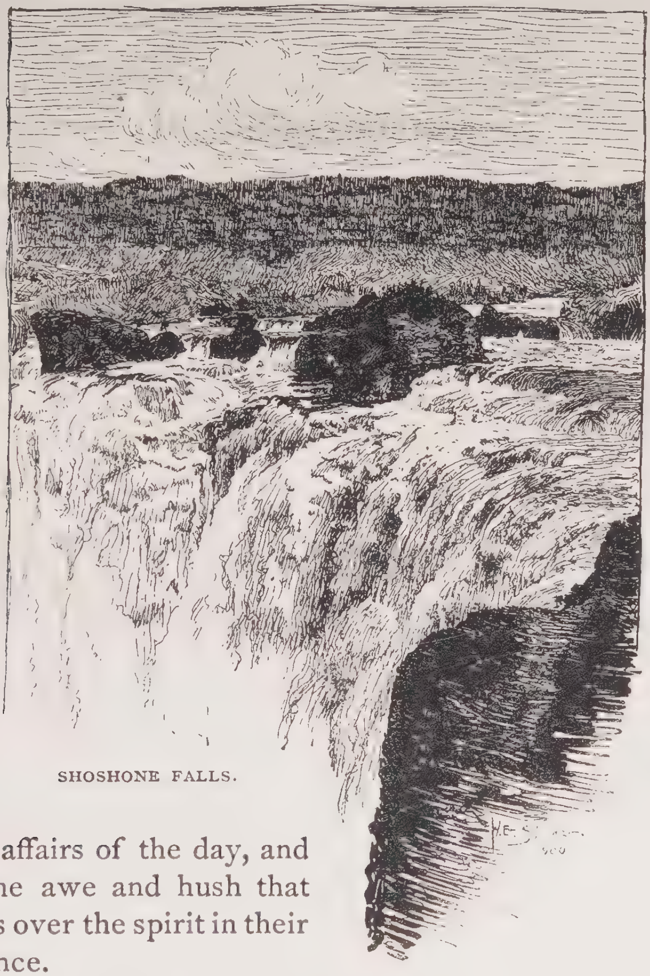
that bound our horizon fifty or a hundred miles away—to the north the Saw Tooth Range and 'Old Soldier,' white as a snow bank; to the southeast the Goose Creek Range; and to the south the Humboldts, far away in Nevada. Our course lay across what was once a sea of molten lava. Our geologists said that sometime in the remote past the crust of the earth here had probably cracked over a wide area, allowing the molten lava to flow up through it, like water through rents in the ice, and inundate thousands of square miles of surface, extending even to the Columbia, many hundred miles distant. This old lava bed is now an undulating sagebrush plain, appearing here and there in broken, jagged outcroppings, or in broad, flat plates like a dark cracked pavement still in place, but partly hidden under a yellowish brown soil. The road was a crooked one, but fairly good. Its course far ahead was often marked to us by a red line visible here and there upon the dull green plain. Flowers, flowers everywhere under the sagebrush, covered the ground. The effect was as of a rough garment with a delicate many-colored silk lining. Great patches of lupine, then the delicate fresh bloom of a species of phlox, then larkspur, then areas of white, yellow, and purple flowers of many kinds. It is a surprise to eastern eyes to see a land without turf, yet so dotted with vegetation. It is as if all these things grew in a plowed field, or in the open road; the bare soil is everywhere visible around them. The bunch grass does not make a turf, but grows in scattered tufts like bunches of green bristles. Nothing is crowded. Every shrub and flower has a free space about it. The horsemen and horsewomen careered gaily ahead, or lingered behind, resting and botanizing amid the brush. The dust from the leading vehicles was seen rising up miles in advance. We saw an occasional coyote slink away amid the sagebrush. Dark-eared and dark-tailed gray hares bounded away or eyed us from cover. Horned larks were common, and the sage sparrow, the meadowlark and other birds were seen and heard.


SNAKE RIVER CANYON, NEAR SHOSHONE FALLS.

Shoshone Falls is in Snake River, which later on becomes the Columbia. The river does not flow in a valley like our eastern rivers, but in walled canyons which it has cut into the lava plain to the depth of nearly a thousand feet. The only sign we could see of it, when ten miles away, was a dark heavy line here and there on the green purple plain, the opposite rim of the great gorge.

Near noon we reached a break, or huge gateway, in the basaltic rocks, and were upon the brink of the canyon itself. It was a sudden vision of elemental grandeur and power opening up at our feet. Our eyes have been reveling in purple distances, in the soft tints of the sage-brush plain, and in the flowers and long gentle flowing hills — when suddenly the earth opens and we look into a rocky chasm nearly a thousand feet deep with the river and the falls roaring at the bottom of it. The grand, the terrible, the sublime are sprung upon us in a twinkling. The chasm is probably a mile or more broad, with perpendicular sides of toppling columnar lava eight hundred feet high. A roadway, carved out of the avalanches of loose rocks that hang upon the sides of the awful gulf, winds down to the river and to the cable ferry above the falls. Our party, in detached groups, make slow progress down to this ferry — there is so much to arrest and fascinate the attention; the new, strange birds, such as the white-throated swift, the violet-backed swallow, the strange and beautiful wild flowers in the rocks, the rocks themselves in toppling six-sided columns, the spray from the falls below us rising up over the chasm — these and other features make us tarry long by the way.

In order to get to the front of the falls and pluck out the heart of the sublimity the traveler must cross to the south side of the river, at this point less than half a mile wide. Here the shore recedes in broad irregular terraces, upon one of which stands a comfortable summer hotel. Scaling slippery and perilous rocky points near it, we stand on the very brink of the chasm and take our fill of the awful and the sublime as born of cliff and cataract. We cling to stretched ropes and wires and peer down into the abyss. Elemental displays on such a scale crowd all trivial and personal thoughts out of the mind of the beholder. It is salutary to witness them occasionally if only to winnow out of our minds the dust and chaff of the petty affairs of the day, and feel the awe and hush that comes over the spirit in their presence.



SHOSHONE FALLS.

Shoshone Falls is probably second only to Niagara—less in volume, but of greater height and with a far more striking and picturesque setting. Indeed, it is a sort of double Niagara, one of rocks and one of water, and the beholder hardly knows which is the more impressive.

The river above the main fall is split up into several strands by isolated masses of towering rocks; each of these strands ends in a beautiful fall, forty or fifty feet in height; then the several currents unite for the final plunge down a precipice of two hundred and fifty feet. To get a different, and if possible, a closer view of the falls, we climbed down the side of the chasm by means of ladders and footsteps cut in the rock and soil, to the margin of the river below. Here we did homage at the foot of the grand spectacle and gazed upward into its awful face. The canyon below the falls is so broad that the river has an easy egress, hence there is nothing of that terrible agony upon the face of the waters that we see in the gorge below Niagara. Niagara is much the more imposing spectacle. Shoshone is the more ideal and poetic. It is a fall from an abyss into a deeper abyss.

A few miles below the falls are still other wonders in the shape of underground rivers which leap out of huge openings in the side of the canyon — a subterranean water system cut across by a larger river. The streams that emerge in this dramatic manner are doubtless the same that suddenly take to earth far to the northward. Why they also did not cut canyons in the plain is an interesting problem.

In the trees about the hamlet of Shoshone I first made acquaintance with the house finch, a bird with quivering flight and bright cheery song. It suggests our purple finch and seems to be as much of a house and home bird as the ugly English sparrow. The Arkansas flycatcher also was common here, taking the place of our kingbird.

In Idaho we reach a land presided over by the goddess Irrigation. Here she has made the desert bloom as the rose. We see her servitors even in the streets of large towns in the shape of great water wheels turned by the current, out of which they lift water up into troughs that distribute it right and left into orchards and gardens. Here may the dwellers well say with the Psalmist, "I will lift up mine eyes unto the hills, from whence cometh my help."

The Oregon Short Line railroad takes the general direction of the old Oregon trail along Snake River through Idaho and Oregon. It is a treeless country, save for the hand of man and the water from the hills. Vast patches of the original sagebrush alternate with vineyards and orchards — orchards of peaches, prunes, and apricots — or with meadows and grain fields. Where the irrigating ditch can be carried, there the earth is clothed with grass or grain or verdure. Baptize the savage sagebrush plain with water and it becomes a christian orchard and wheat field. Now we begin to see magpies from the car windows — twinkling black and white wings and a long-tailed body. Lombardy poplars stand like rows of sentinels around the lonely farmhouses. These trees appear to be the only ones planted in this section. The near-by foothills are of a yellowish earth color, speckled as a thrush's breast with sagebrush. In other places lupine and wild sunflowers cover the land for miles, the latter giving a touch of gold to the hills.

After Snake River escapes from the deep lava canyon of Shoshone Falls, it flows for many miles between level banks, with here and there a slowly turning irrigating wheel lifting the water up to be emptied into troughs or ditches. Near the boundary between Oregon and Idaho the Snake plunges into the

AN IRRIGATING WHEEL.

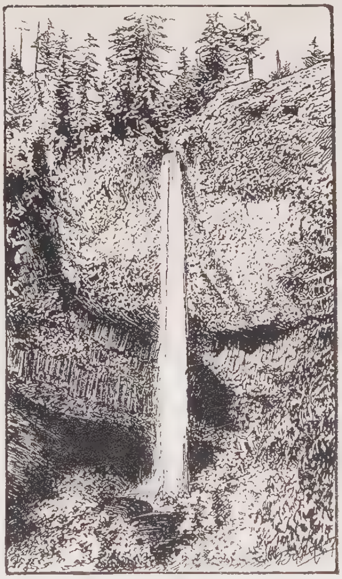
mountains; plump, full-breasted, tan-colored heights close about it on all sides, now speckled with sagebrush, then lightly touched by the most delicate green, the first tender caress of May. All the lines are feminine and flowing, only here and there a touch of ruggedness as the brown rock crops out. Cover these mountains with turf, and they are almost a copy of the sheep fells and green ranges of northern England. They are marked by the same fullness and softness of outline. For many miles the Snake flows north, through these treeless, rounded, flower-painted, green-veiled mountains, until it enters the terrible canyon between the Seven Devils and the Wallowas; reappearing at the mouth of the Clearwater it bends westerly and cuts another long canyon across the high plateau of eastern Oregon and Washington; it does not traverse any flat country until it finally emerges on the sand plains near its junction with the Columbia.

Our train made a long detour through Oregon and Washington and put us down at Lewiston in Idaho, that we might have a steamboat ride down Snake River to its mouth in the Columbia. I had somehow got the impression that I should see great forests in Washington and Oregon, but we missed them. They are on the moist Pacific slope west of the Cascade range. We sailed 150 miles that afternoon down the Snake amid mountains two thousand or more feet high, as smooth and as treeless as the South Downs of England; very novel, very beautiful, their lower slopes pink in places with a delicate flower called Clarkia, in others blue-purple as the cheek of a plum. I say mountains, but they are only the sides of the huge canyon through which the Snake flows. How the afternoon sun brought out their folds and dimples and clinging delicate tints! The green of the higher slopes was often like a veil of thin green gauze, dropped upon them. The effects were all new to me and pleasing beyond words — wild, aboriginal, yet with such beauty and winsome gentleness and delicacy. The river was almost half the width of the Hudson and much more winding. The geologists speculated upon the formation as it was laid bare in places; the botanists upon the wild flowers that painted the shore; the ornithologists upon the birds seen and heard. Swarms of cliff swallows were observed about the basaltic rocks near the water.

There were not many signs of rural life — here and there low rude farmhouses on the deltas of land at the mouths of the side gorges, and at least one very large fruit farm on a low level area on our right. A novel sight was the long wooden and wire wheat chutes for running the wheat down from the farms back on the high mountain table lands to the river, where the boats could pick it up. They were tokens of a life and fertility quite unseen and unsuspected.

MULTNOMAH FALLS.

The ride in the train along the south bank of the Columbia toward Portland, past The Dalles, past the Cascades, past Oneonta Gorge and the Multnomah and Latourelle Falls, is a feast of the beautiful and the sublime — the most delicate tints and colors of moss and wild flowers setting off the most rugged alpine scenery. In places the railroad embankment is decked with brilliant patches of red and purple flowers, as if garlanded for a festival. Presently the moss-covered rocks are white-aproned with the clear mountain brooks



LATOURELLE FALLS.
260 FEET HIGH.

that cascade down their sides from the dark mantling scenery and cedars above. They are the prelude of what we are presently to see — the gem of all this region, and perhaps the most thrillingly beautiful bit of natural scenery we witnessed on the whole trip — the Multnomah Falls.

The train gave us only five minutes to look at it, but those five minutes were of the most exquisite delight. There, close at hand, but withdrawn into a deep recess in the face of the mountain wall, like a statue in an alcove, stood this vision of beauty and sublimity. How the siren mocked us, and made the few minutes in which we were allowed to view her so tantalizingly brief! Not water, but the spirit of water, of a snow-born mountain torrent, playing and dallying there with wind and gravity, on the face of a vertical moss-covered rocky wall six hundred feet high. So ethereal, yet so massive; a combination of a certain coyness and unapproachableness, with such elemental grandeur and power. It left nothing to be desired but a day in which to picnic upon the flower-covered carpet of moss at its feet. The brief view warmed me up like a great symphony. It was indeed to the eye what the sweetest and most stirring music is to the ear — harmony, delicacy, and power. Such an air of repose and completeness about it all; yes, and of the private and se-

MULTNOMAH FALLS.
600 FEET HIGH.

cluded. The nymph was withdrawn into her bower, but had left the door open. This element of mystery and shyness was afforded by the well hidden rocky basin into which the water fell, and by the curtain of rock which shut it off from our view. Out of this basin the current emerged near at hand and more familiar in a fall of fifty feet or more, whence it took its way to the river in a clear rapid stream. It was as if the goddess had reclothed herself in this hidden rock-screened pool and come forth again in more palpable everyday guise. I hardly expected to see anything in Alaska or anywhere else that would blur or lessen the impression made by those falls, and I did not, and probably never shall.

We had hoped that at Portland and Seattle we should get glimpses of the great mountains — Hood, Baker, Rainier — but we did not; fog and cloud prevented. A lady living upon the heights at Seattle told me that when a dweller there was out of humor, her neighbors usually excused her by saying, "Well, she has not seen the Olympics this morning." I fancy they are rarely on exhibition to strangers or visitors.

THE INLAND PASSAGE.

The chapters of our sea voyage and Alaska experiences properly open on the afternoon of May 31st when we find our staterooms in our steamer, the 'George W. Elder,' receive our California contingent, which includes John Muir, and make our final preparations for the trip. The steamer is a large iron ship specially fitted up for our party. Her coal bunkers are full and she is provisioned for a two months' cruise. We have hunting parties among us that expect to supply us with venison and bear meat, but to be on the safe side we take aboard eleven fat steers, a flock of sheep, chickens, and turkeys, a milch cow, and a span of horses. The horses are to be used to transport the hunters and their traps inland and to pack out the big game. The hold of our ship looked like a farmer's barnyard. We heard the mellow low of the red steer even in the wilds of Bering Sea, but the morning crow of our cockerels was hushed long before that time. And I may here anticipate events so far as to say that the horses proved a superfluity, their only association with game being the two fox skins for which Mr. Harriman traded them at Kadiak. But this was no ignoble ending as they were choice pelts of the rare and coveted black fox. Besides the live stock just mentioned, an inventory of our equipment would include one steam and two naphtha launches, boats and folding canvas canoes, tents, sleeping bags, camp outfits, and in fact everything such an expedition could possibly need. Our completed party now numbered over forty persons besides the crew and the officers of the ship (126 persons in all), and embraced college professors from both the Atlantic and Pacific coasts — botanists, zoologists, geologists, and other specialists, besides artists, photographers, two physicians, one trained nurse, one doctor of divinity, and at least one dreamer.

Dr. Dall was our Alaska specialist, having previously visited the territory thirteen times and having spent many years there. In John Muir we had an authority on glaciers, and a thorough one — so thorough that he would not allow the rest of the party to have an opinion on the subject. The Indians used to call him the Great Ice Chief. Dr. Fernow was our professor of forestry and might be called the Great Tree Chief. Then what Professors Emerson, Palache, and Gilbert could not tell us about the geology of the country, or Brewer and Gannett about the climate and physical geography, or Coville and Trelease about the plants, or Ritter and Saunders about the life in the sea, or Merriam about the mammals, or Ridgway and Fisher about the birds, or Elliot about the game birds, or Devereux about mines, or Grinnell and Dellenbaugh about Indians, it could hardly be worth our while to try to find out.

We were in British waters on June 1st and set foot on British soil at Victoria on the Island of Vancouver. Even the climate is British — mist and a warm slow rain — with dense verdure and thick green turf dotted with the English daisy. Indeed, nature here seems quite as English as does the sober solidly-built town with its fine and imposing Parliament building — all but the birds. I hear the western highhole calling like ours at home; and the olive-backed thrush, the yellow warbler, and the white-crowned sparrow are in song along the woods and brushy fields.

On June 1st, after touching at Victoria, we were fairly launched upon our voyage. Before us was a cruise of several thousand miles, one thousand of which was through probably the finest scenery of the kind in the world that can be seen from the deck of a ship—the scenery of fiords and mountain-locked bays and arms of the sea. Day after day a panorama unrolls before us with features that might have been gathered from the Highlands of the Hudson, from Lake George, from the Thousand Islands, the Saguenay, or the Rangeley Lakes in Maine, with the addition of towering snow-capped peaks thrown in for a background. The edge of this part of the continent for a thousand miles has been broken into fragments, small and great, as by the stroke of some earth-cracking hammer, and into the openings and channels thus formed the sea flows freely, often at a depth

VISTA OF INSIDE PASSAGE.

of from one to two thousand feet. It is along these inland ocean highways, through tortuous narrows, up smooth placid inlets, across broad island-studded gulfs and bays, with now and then the mighty throb of the Pacific felt for an hour or two through some open door in the wall of islands, that our course lies.

INSIDE PASSAGE.

For two days Vancouver Island is on our left with hardly a break in its dark spruce forests, covering mountain and vale. On our right is British Columbia, presenting the same endless spruce forests, with peaks of the Coast Range, eight or ten thousand feet high, in the background, and only an occasional sign of human life on shore. I recall a lone farmhouse in a stumpy clearing that drew our eyes. How remote and secluded it looked. The dark forests with a fringe of dead trees where the pioneer's fire had raged, encompassed it about. The grass and grain looked green among the stumps, and near the house, which was a well-built, painted structure, we could see fruit trees and a garden. Not much wild life about us; now and then a duck or two, an occasional bald eagle, a small flock of phalaropes, which the sailors call 'sea geese' as they sit on the water like miniature geese.

Our first dangerous passage is Seymour Narrows, which we strike at the right stage of the tide. Cautiously the ship feels her way through the contorted currents that surge above the sunken rocks. Fog clouds cling to the white peaks that rise above the dark forests about us and partly veil them. At times we are so near them that with a glass one can see where little snow balls have detached themselves and made straight lines down the smooth

PAINTING BY F. S. DELLENBAUGH

Sunset, Gulf of Georgia

white surface. It is the 2d of June, but the wind that sweeps down the channel is as cold as that of an October morning at home. The event of this day was the sunset at 8:30 o'clock. I had often seen as much color and brilliancy in the sky, but never before such depth and richness of blue and purple upon the mountains and upon the water. Where the sun went down the horizon was low, and but a slender black line of forest separated the sky from the water. All above was crimson and orange and gold, and all below, to the right and left, purple laid upon purple until the whole body of the air between us and the mountains in the distance seemed turned to color.

AN ALASKA FIORD.

As we go north the scenery becomes more and more like that of the fiords on the coast of Norway, except that the mountains there are mostly deforested. Deep sea-blue water about us, dark spruce- and cedar-clad and torrent-furrowed mountains rising above us, touched with snow on their summits. Now and then a bald eagle flaps heavily along the mountain side, or a line of black oyster-catchers skim swiftly over the surface. We see Mount Palmerston on our left, five thousand feet high, covered with a heavy snow mantle in which his rocky bones have worn many holes. The brilliant sun brings out every line and angle.

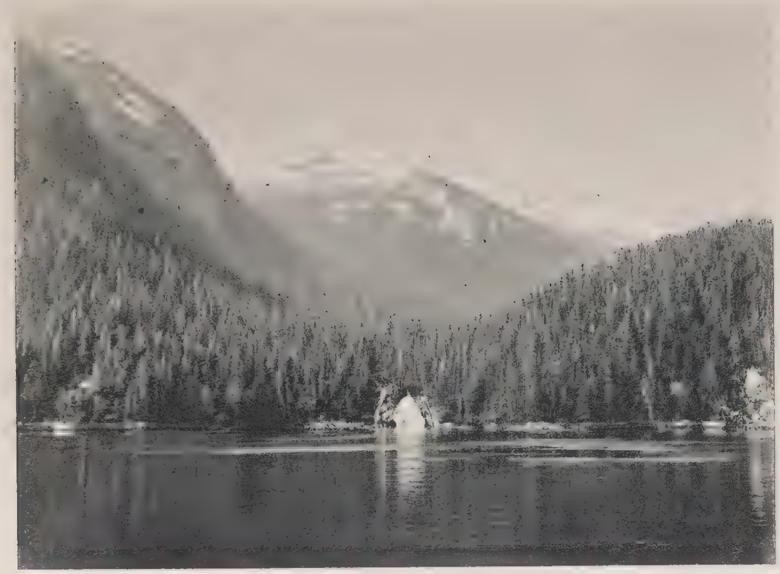
At noon we stop in a deep cove with a rapid stream coming into the head of it, to give some of our party an hour on shore. While we are waiting for them, two deer appear upon the beach, about a mile distant. They browse around awhile, then disappear in the woods. To the west of us is a striking picture. In the foreground is the sea with a line of low, rounded, dark rocky islands; behind them, far off, a range of blue mountains with a broad band of dun-colored clouds resting upon them; rising above the band of clouds a series of snow-covered peaks, with the sun shining full upon them, probably the highest peaks we have yet seen. The cloud belt cuts off and isolates the peaks and gives them a buoyant airy character. From the dark near-by tree-tufted chain of islands, to the white-illuminated peaks, what a wealth of blue and gray tints and tones!

Near nightfall on this second day we begin to feel the great pulse of the Pacific around the head of Vancouver Island, through the broad open door called Queen Charlotte Sound. For three hours the ship rolls as upon the open sea, and to several of us the 'subsequent proceedings' that night were void of interest.

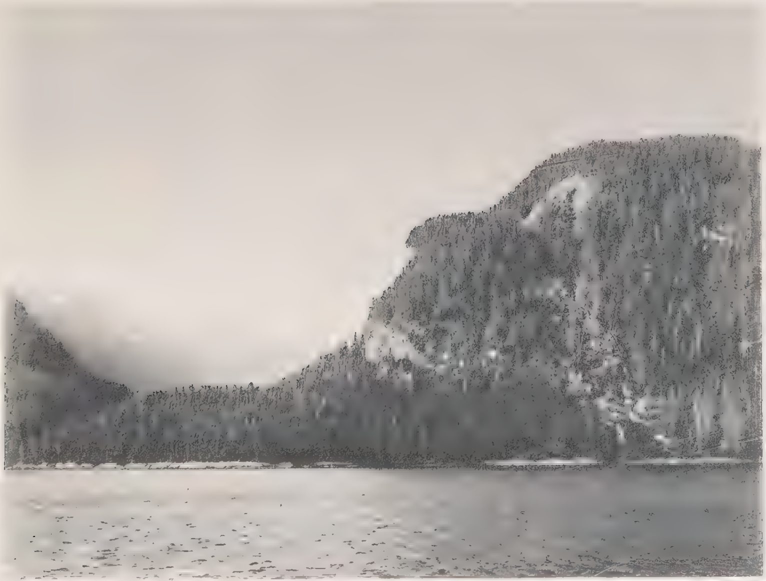
In the early morning we pass another open door, Milbank Sound, but are soon in Graham Reach, which is like a larger, wilder Hudson. When we look out of our windows the sun is upon the mountain tops, and the snow much farther down their sides than we have yet seen it.

As we progress, many deep ravines are noted in vast recesses in the mountains, scooped out by the old glaciers. They are enormous rocky bowls which we imagine hold crystal lakes; foaming streams pour out of them into the channel. Far up, silver threads of water, born of the melting snows, are seen upon the vast faces of the rocks. Some of them course down the tracks of old landslides; others are seen only as they emerge from the dark spruces.

The snow upon the mountain tops looks new fallen; our glasses bring out the sharp curling edges of the drifts. Here and there along the shore below are seen the rude



Hanging Valley, Fraser Reach



PHOTOGRAPHS BY MERRIAM GILBO & CO

Inside Passage, British Columbia

huts of trappers and hunters. The eternal spruce and hemlock forests grow monotonous. The many dry, white trunks of dead trees, scattered evenly through the forest, make the mountains look as if a shower of gigantic arrows had fallen upon them from the sky. Gulls, loons, and scoters are seen at long intervals.

Snow avalanches have swept innumerable paths, broad and narrow, down through the spruce forest. Those great glacier basins on our left invite inspection, so we send a party ashore to examine one of them. They do not find the expected lake, but in its stead a sphagnum bog, through which the creek winds its way. Fresh tracks and spoor of deer are seen.

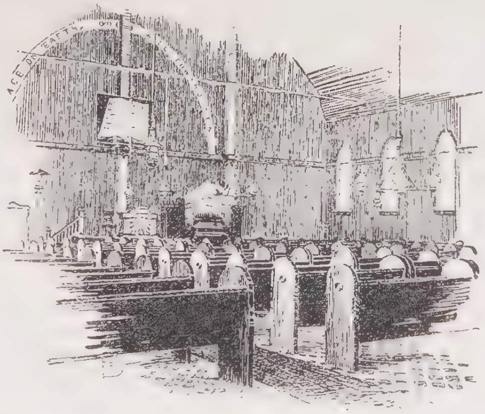
In mid-afternoon we turn into Lowe Inlet, a deep narrow mountain-locked arm of the sea on our right, with a salmon cannery at the head of it, and a large rapid trout stream making a fine waterfall. Here, among the employees of the cannery, we see our first Alaska Indians and note their large, round, stolid innocent faces. Here also some of us get our first taste of Alaska woods. In trying to make our way to the falls we are soon up to our necks amid moss, fallen timber and devil's club. Progress is all but impossible, and those who finally reach the falls do so by withdrawing from the woods and taking to boats. Traversing Alaska forests must be a trying task even to deer and bears. They have apparently never been purged or thinned by fire—too damp for that—and they are choked with the accumulation of ages. Two or three generations of fallen trees cross one another in all directions amid the rocks, with moss over all like a deep fall of snow, and worse still, thickly planted with devil's club. This is a shrub as high as your head, covered with long sharp spines and with large thorny leaves. It is like a blackberry bush with thorns ten times multiplied. It hedges about these mossy cushions as with the fangs of serpents. One can hardly touch it without being stung. The falls are the outlet of a most enticing deep hidden valley, with a chain of beautiful lakes, we were told, but our time was too brief to explore it. The winter wren was found here, and the raven, and a species of woodpecker.

METLAKAHTLA.

We were not really in Alaska waters until the next day, June 4th. This was Sunday and we spent most of the day visiting Metlakahtla, the Indian Mission settlement on Annette Island, where we saw one of the best object lessons to be found on the coast, showing what can be done with the Alaska Indians. Here were a hundred or more comfortable frame houses, some of them two stories, many of them painted, all of them substantial and in good taste, a large and imposing wooden church, a large school house, a town hall, extensive canning establishments, and so on, owned and occupied by seven or eight hundred Tlinkit Indians, who, under the wonderful tutelage of William Duncan, a Scotch missionary, had been brought from a low state of savagery to a really fair state of industrial civilization. The town is only twelve years old and is situated on a broad expanse of nearly level land at the foot of the mountains. The large stumps and logs on the surface between the houses show how recently the land has been

METLAKAHTLA.

cleared. The earth was covered with a coat of peat, the accumulation of ages of a thick growth of moss. Beneath this the soil was red and friable. We strolled about the numerous streets on broad plank walks that reached from side to side above the rocks and stumps. Many of the houses had gardens where were grown potatoes, turnips, onions, strawberries, raspberries and currants. The people were clad as well and in much the same way as those of rural villages in New York and New England. A large number of them were gathered upon the wharf when we landed, their big round faces and black eyes showing only a quiet respectful curiosity. We called upon Mr. Duncan at his house and listened to his racy and entertaining conversation. His story was full of interest. At eleven o'clock the church bell was ringing and the people — men, women and children, all neatly and tastefully clad — began to assemble for their Sunday devotions. Some of the hats of the younger women looked as if fresh from the hands of a fashionable city milliner. Many of the older matrons wore various colored silk handkerchiefs upon their heads. Mr. Duncan preached to his people in their native tongue, a vague, guttural, featureless sort of language, it seemed. The organ music and the singing were quite equal to what one would hear in any rural church at home. The church was built by native carpenters out of native woods, and its large

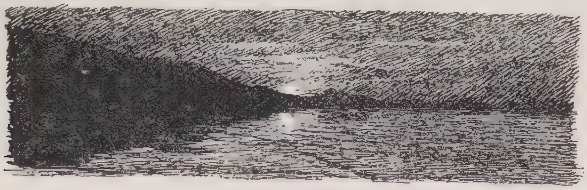

INTERIOR OF CHURCH MADE BY INDIANS AT METLAKAHTLA.

audience room, capable of seating eight or nine hundred people, was truly rich and beautiful. Mr. Duncan is really the father of his people. He stands to them not only for the gospel but for the civil law as well. He supervises their business enterprises and composes their family quarrels.

The Alaska Indian is of quite a different race from the Red man, as we know him. He is smaller in stature and lighter in color and has none of that look as of rocks and mountains, austere and relentless, that our Indians have. He also takes more kindly to our ways and customs and to our various manual industries.

In reaching the land of the Indian we had reached the land of the raven also — few crows, but many ravens. We saw them upon the beach and around the wharf long before we landed. In the village they were everywhere — on the roofs of the houses, and on the stumps and dooryard fences. Six were perched upon one of the towers of the church as I approached. Their calls and croakings and jabberings were in the ear at all times. The raven is a much more loquacious bird than the crow. His tongue is seldom still. When he has no fellow to talk to he talks to himself, and his soliloquy is often full of really musical notes. In these Alaska settlements they appear to act as scavengers, like the buzzards in the South. Other birds that attracted my attention were the song sparrow, a nest of which with young I found amid some bushes near one of the houses, and the olive-backed thrush, which was flitting about the streets and gardens.

In the afternoon we are steaming over a vast irregular shaped body of water — Clarence Straits. On one side the sky and water meet in a long horizontal line. The sun is shining brightly and the far off snow-capped mountains roll up against the sky like thunder-heads. Nearer by are small spruce-tufted islands, and low dark shores. Etolin Island is ahead of us, and Prince of Wales Island on the west. In the evening we saw the most striking sunset of the voyage. We were just in the right place at just the right time. All the conditions and relations of sun, air, water, and mountain, were as we would have them — a scene such as artists try in vain to paint and travelers to describe: towering snow-clad peaks far ahead of us, rising behind dark blue and purple ranges, fold on fold, and all aflame with the setting sun. We looked upon the spectacle through a huge gateway in our front which formed a dark rugged frame to the picture. The solid earth became spiritual and transcendent. Presently another dark gateway opened in the mountains on our right and other transfigured summits — Black Crag, Mt. Whipple, the Pinnacles — came into view, riding slowly along above and behind other blue purple ranges — such depth and softness of tint and shadow below, such glory of flame and gold above. The ship creeps along in the deepening twilight and slowly the flaming peaks turn to neutral gray.



SUNSET IN INSIDE PASSAGE.

WRANGELL AND JUNEAU.

The morning of the fifth dawns clear and cold, like a winter morning in Florida. It finds us at Fort Wrangell, where we spend a few hours on shore looking at totem poles and viewing the shabby old town, while we keep an eye open to the botany and natural history of the place.

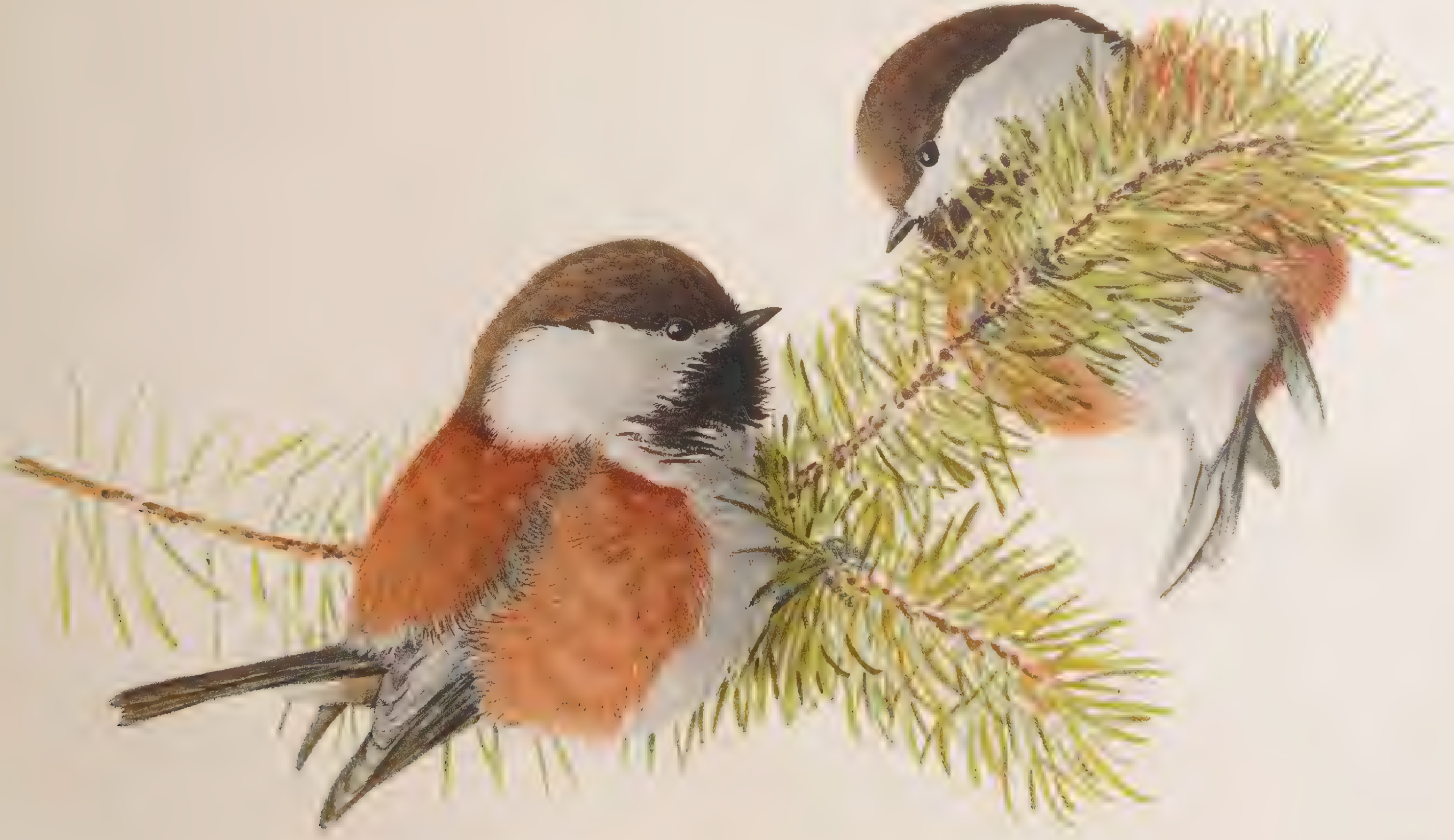
Our collectors bring in a Steller's jay, a russet-backed thrush, an Oregon junco, a gray fox sparrow, a lutescent warbler, a rufous-backed chickadee with nest and eggs, and a red-throated woodpecker.

WRANGELL TOTEMS.

At eight o'clock we are off again toward Wrangell Narrows, across the superb Wrangell Bay. At noon we see Devil's Thumb on our right, a naked shaft over sixteen hundred feet high rising from a mountain which is over seven thousand feet. It is a thumb of goodly dimensions.

The next day we see our first glacier, the Patterson, a small affair, compared with those we were soon to see; indeed about the smallest lamb of the flock of Muir's Mountain sheep, but interesting to novice eyes. It lies there low in the lap or apron of the mountain and suggests the fragment of an arrested or congealed river. All the afternoon we sailed under cloudless skies along Frederick Sound, feasting our eyes upon the vast panorama of the encircling mountains. When we tire of this there are the low curving shores and nearer-by heights and the numerous tree-capped islands that seem floating upon the blue expanse of water. Many whales are seen blowing, their glistening backs emerging from the water, turning slowly like the periphery of a huge wheel.

PASSAGE NEAR WRANGELL NARROWS.



We have reached the land of eagles as well as of ravens. On a low rocky point seven eagles sit in a row on the rocks near the water's edge and regard us indifferently, like Indian chiefs.

We stopped a day at Juneau from which point we visited the famous Treadwell mines on Douglas Island. Nearly 2000 tons of quartz rock are crushed daily at these mills and the roar made by the eight hundred or more stamps, all under one roof, in pulverizing this rock dwarfs all other rackets I ever heard. Niagara is a soft hum beside it. Never before have I been where the air was torn to tatters and the ear so stunned and overwhelmed as in this mill. If the heavens ever should fall and one were under a roof strong enough to stand the shock, I think the uproar might be something like what we experienced that day. It was not a grand reverberating sound like the sounds of nature, it was simply the most ear-paralyzing noise ever heard within four walls. Heard I say, though in truth we did not hear it. To hear a thing, there must be some silence; this hubbub was so great and all-pervasive that the auditory nerve was simply bruised into insensibility. The remarkable thing about this mine is the enormous extent of the gold-bearing quartz and its low grade — three or four dollars per ton of rock. And yet the process of extracting the gold has been so cheap-

OLD CHURCH AT JUNEAU.

ened by improved methods and machinery that the investment yields a good profit.

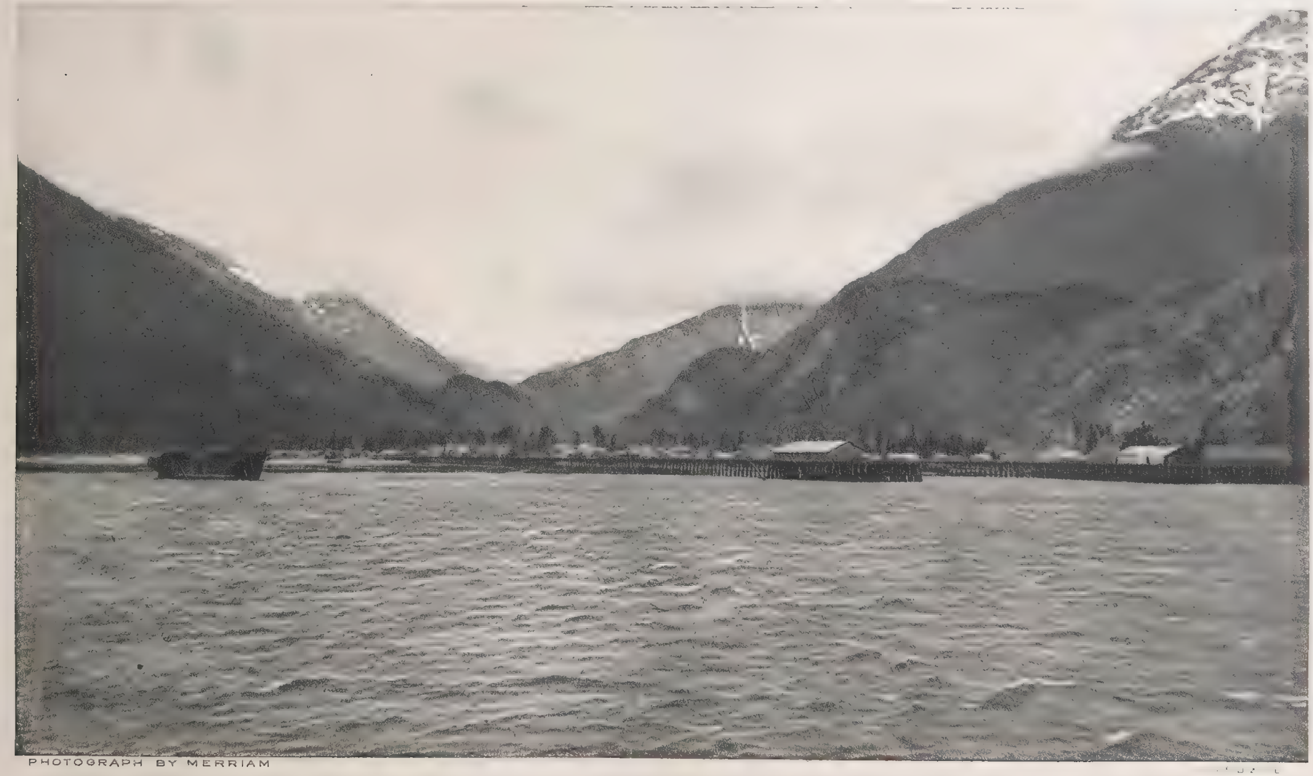
LYNN CANAL AND SKAGWAY.

All the afternoon we steamed up Lynn Canal over broad, placid waters, shut in by dark smooth-based mountains that end in bare serrated peaks. Glaciers become more and more numerous; one on our right hangs high on the brink of a bare sheer precipice, as if drawing back from the fearful plunge. But plunge it did not and probably never will.

DAVIDSON GLACIER, LYNN CANAL.

We are soon in sight of a much larger glacier, the Davidson, on our left. It flows out of a deep gorge and almost reaches the inlet. Seen from afar it suggests the side view of a huge white foot with its toe pressing a dark line of forest into the sea.

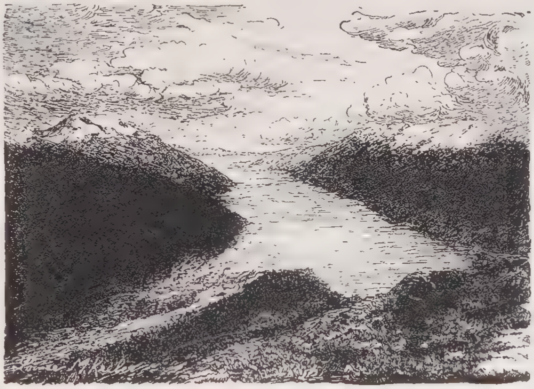
Before sunset we reach Skagway and land at the long high pier (the tides here are sixteen or eighteen feet). The pier is swarming with people. Such a gathering and such curiosity and alertness we have not before seen. Hotel runners flourish their cards and call out the names



PHOTOGRAPH BY MERRIAM

SKAGWAY ALASKA IN JUNE 1899

of their various hostelries before we have touched the dock. Boys greet us with shouts and comments, women and girls, some of them in bicycle suits, push to the front and gaze intently at the strangers. All seemed to be expecting something, friends or news, or some sensational occurrences. No sooner had we touched than the boys swarmed in upon us like ants and began to explore the ship, and were as promptly swept ashore again. Skagway is barely two years old. Born of the gold fever, it is still feverish and excitable. It is on a broad delta of land made by the Skagway River between the mountains, and, it seems to me, is liable at any time by a great flood in the river to be swept into the sea. It began at the stump and probably is still the stumpiest town in the country. Many of the houses stand upon stumps; there are stumps in nearly every dooryard, but the people already speak of the 'early times,' three years ago.



HEAD OF LYNN CANAL, SKAGWAY ON LEFT.

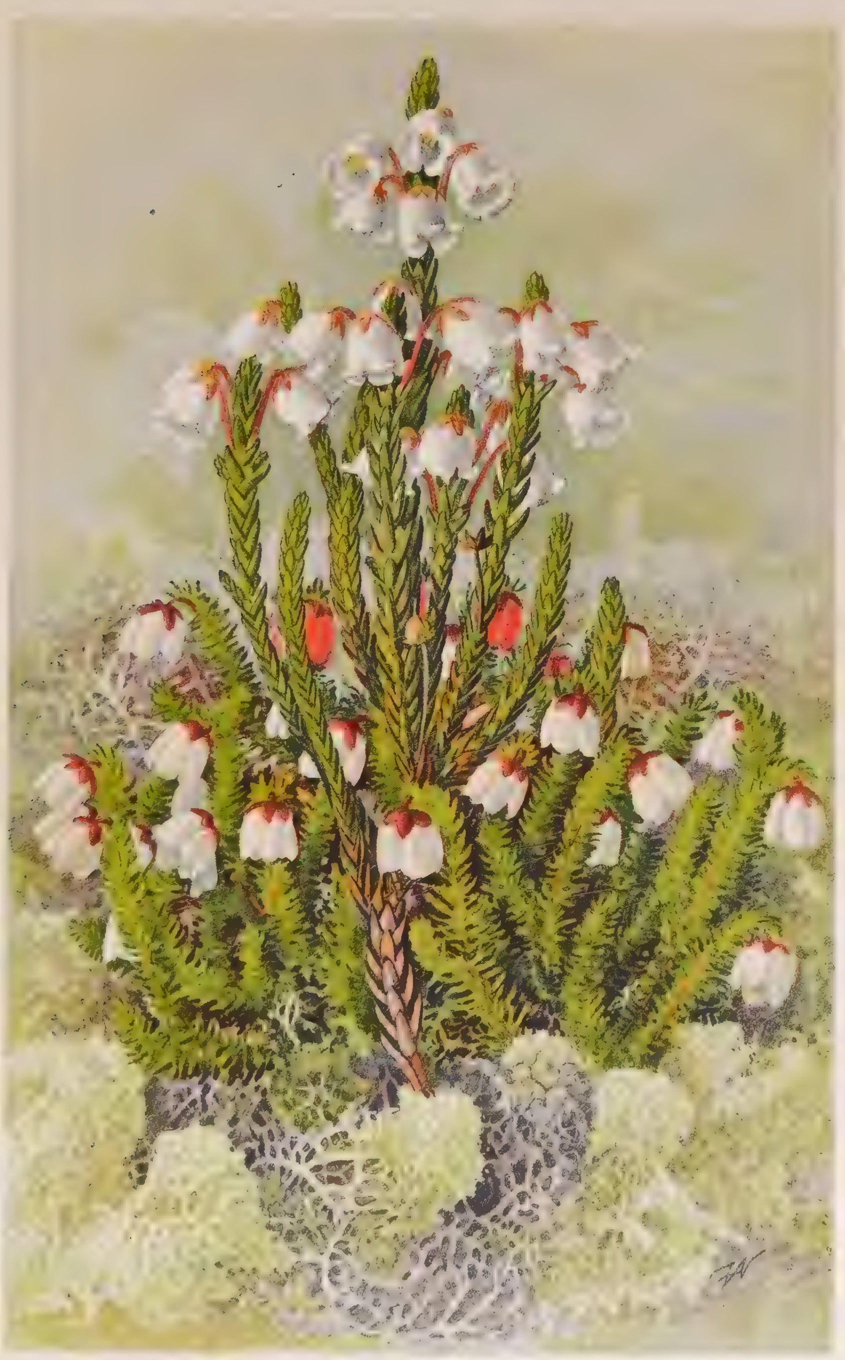
On the steep bushy mountain side near the wharf I heard the melodious note of my first dwarf hermit thrush. It was sweet and pleasing, but not so prolonged and powerful as our hermit.

WHITE PASS.

The next day the officials of the Yukon and White Pass Railroad took our party on an excursion to the top of the famous White Pass, twenty-one miles distant.

The grade up the mountain is in places over 200 feet to the mile and in making the ascent the train climbs about 2,900 feet. After the road leaves Skagway River its course is along the face of precipitous granite peaks and domes, with long loops around the heads of gorges and chasms; occasionally on trestles over yawning gulfs, but for the most part on a shelf of rock blasted out of the side of the mountain. The train stopped from time to time and allowed us to walk ahead and come face to face with the scene. The terrible and the sublime were on every hand. It was as appalling to look up as to look down; chaos and death below us, impending avalanches of hanging rocks above us. How elemental and cataclysmal it all looked! I felt as if I were seeing for the first time the real granite ribs of the earth; they had been cut into and slivered and they were real and solid. All I had seen before were but scales and warts on the surface by comparison; here

LOOKING BACK AT HEAD OF LYNN CANAL FROM WHITE PASS RAILROAD.



were the primal rocks, sweeping up into the clouds and plunging down into the abyss, that held the planet together. Over against us on the other side of the chasm we caught glimpses here and there of the 'Dead Horse trail.' Among the spruces and along the rocky terraces, are said to have perished several thousand horses on this terrible trail. The poor beasts became so weak from lack of food that they slipped on the steep places and plunged over the precipices, thus ending their misery.

RAILROAD TERMINUS, SUMMIT OF WHITE PASS, JUNE 7, 1899.

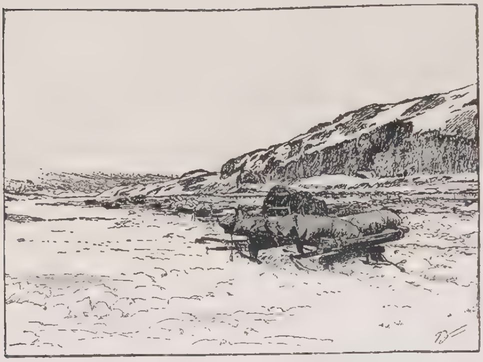
S8106

On the summit we found typical March weather: snow, ice, water, mud, slush, fog and chill. The fog prevented us from getting a view down toward the Klondike country, 600 miles away. The British flag and the Stars and Stripes were floating side by side on the provisional boundary line between Alaska and British Columbia, and several Canadian police were on duty there. In this bleak spot we found birds nesting or preparing to nest: the pippet, the golden-crowned sparrow and the rosy finch. The vegetation was mostly moss

CUSTOM HOUSE AND FLAGS OF BOTH NATIONS ON PROVISIONAL BOUNDARY, SUMMIT OF WHITE PASS, JUNE 7, 1899.

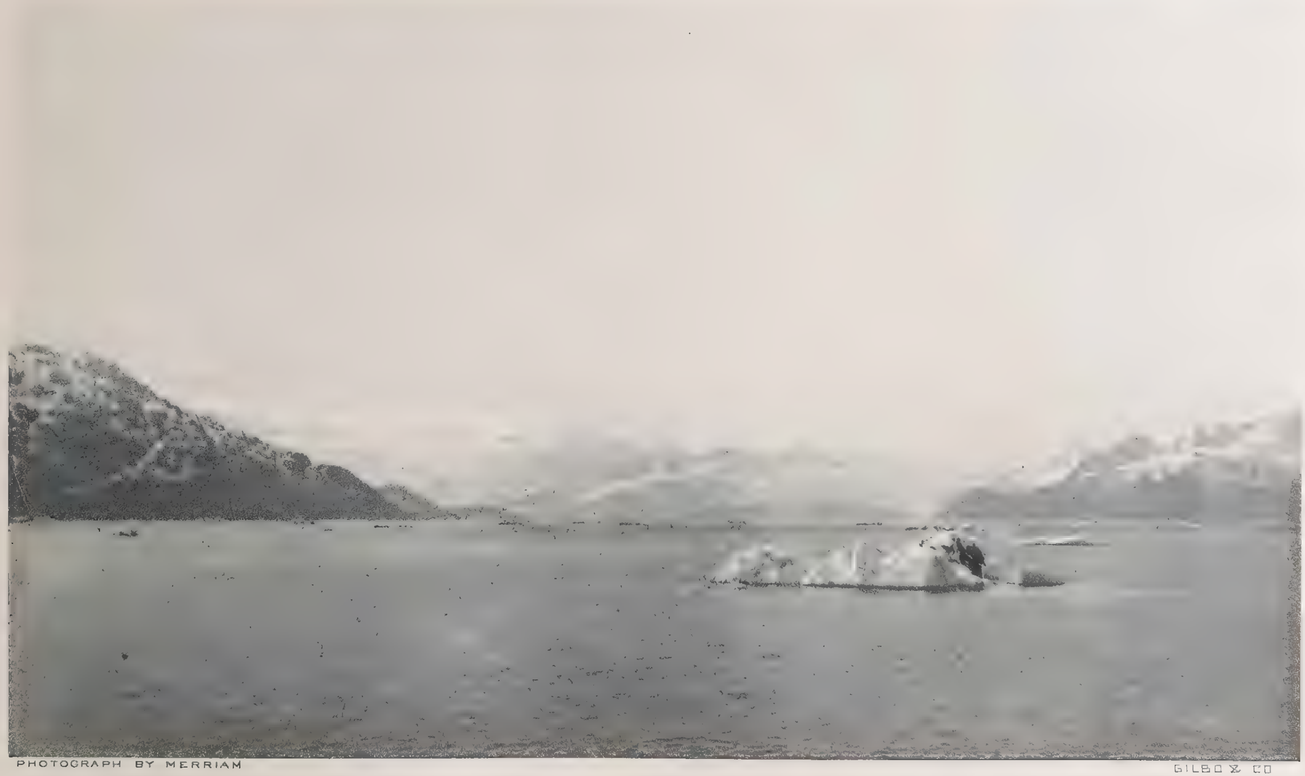
and lichens and low stunted spruce, the latter so flattened by the snow that one could walk over them.

In keeping with the snow and desolation and general dissolution was the group of hasty, ragged canvas buildings and tents at the railroad terminus, the larger ones belonging to the company, the others for the accommodation of traveling gold seekers. In one of the larger tents a really good dinner was served our party, through the courtesy of the railroad officials. We saw on the trail a few gold seekers with their heavy packs; they paused and looked up wistfully at our train.


LAST SLED-LOAD OF GRAIN HAULED OVER WHITE PASS, JUNE 7, 1899.

In ascending the Pass we met a small party of naturalists from the U. S. Biological Survey on their way to the Yukon, the entire length of which they intended traversing in a small boat. We stopped long enough to visit their tent and take a hasty look at the interesting collection of birds and mammals they had already secured here. They have since returned and published a report on the results of their labors.

At the time of our visit the railroad terminus was at the summit of the pass, from which point passengers bound for the Klondike were transported to Lake Bennett by sleighs. The deep snow was melting so rapidly and slumping so badly that the sled loads of people and grain we saw depart for the Upper Yukon were, we were told, the last to get through until the completion of the railroad to Bennett.



PHOTOGRAPH BY MERRIAM

GILBO & CO

ICEBERG IN GLACIER BAY

THE MUIR GLACIER.

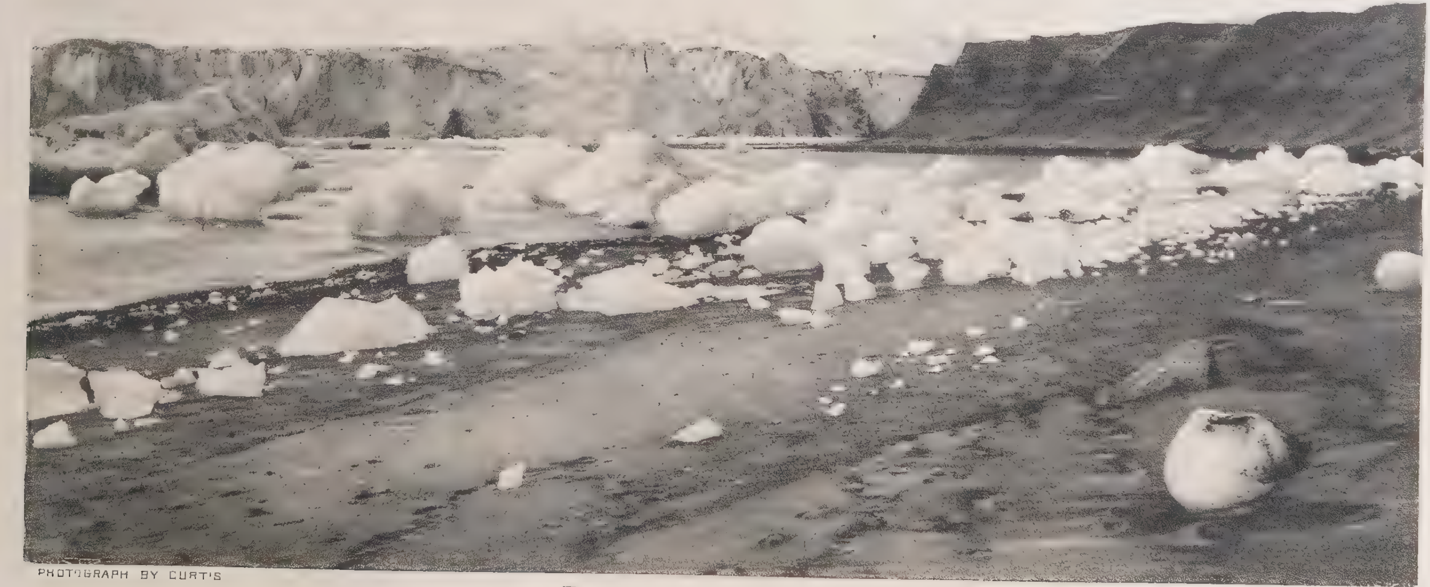
The next day finds us in Glacier Bay on our way to the Muir Glacier. Our course is up an arm of the sea, dotted with masses of floating ice, till in the distance we see the great glacier itself. Its front looks gray and dim there twenty miles away, but in the background the mountains that feed it lift up vast masses of snow in the afternoon sun. At five o'clock we drop anchor about two miles from its front, in eighty fathoms of water, abreast of the little cabin on the east shore built by John Muir some years ago. Not till after repeated soundings did we find bottom within reach of our anchor cables. Could the inlet have been emptied of its water for a moment we should have seen before us a palisade of ice nearly 1,000 feet higher and over two miles long, with a turbid river, possibly half a mile wide, boiling

MUIR CABIN, GLACIER BAY, BUILT IN 1890.

up from beneath it. Could we have been here many centuries ago, we should have seen, much further down the valley, a palisade of ice two or three thousand feet high. Many of these Alaska glaciers are rapidly melting and are now but the fragments of their former selves. From observations made here twenty years ago by John Muir, it is known that the position of the front of Muir Glacier at that time was about two miles below its present position, which would indicate a rate of recession of about one mile in ten years.

What we saw on that June afternoon was a broken and crumbling wall of ice 250 feet high in our front, stretching across the inlet and running down to a low dirty crumbling line where it ended on the shore on our left, and where it disappeared behind high gray gravelly banks on our right. The inlet near the glacier was choked with icebergs.

What is that roar or explosion that salutes our ears before our anchor has found bottom? It is the downpour of an enormous mass of ice from the glacier's front, making it for the moment as active as Niagara. Other and still other downpours follow at intervals of a few minutes, with deep explosive sounds and the rising up of great clouds of spray, and we quickly realized that here is indeed a new kind of Niagara, a cataract the like of which we have not before seen, a mighty congealed river that discharges into the bay intermittently in ice avalanches that shoot down its own precipitous front. The mass of ice below the water line is vastly greater than that above, and when the upper portions fall away enormous bergs are liberated and rise up from the bottom. They rise slowly and majestically, like huge monsters of the deep, lifting themselves up to a height of fifty or a hundred feet, the water pouring off them in white sheets, then subsiding again and floating away with a huge wave



PHOTOGRAPH BY CURTIS

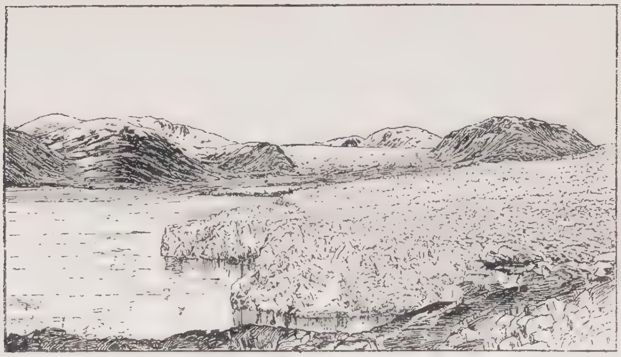
EAST END OF MUIR GLACIER

JOHN ANDREW & SON

in front. Nothing we had read or heard had prepared us for the color of the ice, especially of the newly exposed parts and of the bergs that rose up from beneath the water — its deep, almost indigo blue. Huge bergs were floating about that suggested masses of blue vitriol.

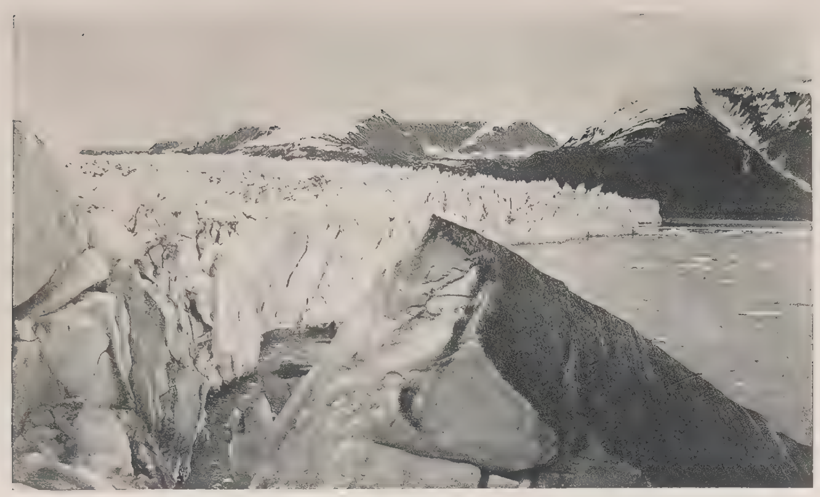
As soon as practicable many of us went ashore in the naphtha launches, and were soon hurrying over the great plateau of sand, gravel, and boulders which the retreating glacier had left and which make up its vast terminal moraine.

Many of the rocks and stones on the surface were sharp and angular, others were smooth and rounded. These latter had evidently passed as it were through the gizzard of the huge monster, while the others had been carried on its back. A walk of a mile or more brought us much nearer the glacier's front, and standing high on the bank of the moraine we could observe it at our leisure. The roar that followed the discharge of ice from its front constantly suggested the blasting in mines or in railroad cuts. The spray often rose nearly to the top of the glacier. Night and day, summer and winter, this intermittent and explosive discharge of the ice into the inlet goes on and has gone on for centuries. When we awoke in the night we heard its muffled thunder, sometimes so loud as to jar the windows in our staterooms, and the swells caused by the falling and rising masses rocked the ship. Probably few more strange and impressive spectacles than this glacier affords can be found on the continent. It has a curious fascination. Impending cataclysms are in its look. In a moment or two you know some part of it will topple or slide into the sea. One afternoon during our stay about half a mile of the front fell at once. The swell which it caused brought grief to our photographers who had ventured too near it. Their boat was filled and their plates were destroyed. The downfall from the front is usually a torrent of shattered ice which pours down, simulating water, but at longer intervals enormous solid masses like rocks, topple and plunge. It is then that the great blue bergs rise up from below — born of the depths. The enormous pressure to which their particles have been subjected for many centuries seems to have intensified their color. They have a pristine, elemental look. Their crystals have not seen the light since they fell in snowflakes back amid the mountains generations ago. All this time imprisoned, traveling in darkness, carving the valleys, polishing the rocks, under a weight as of mountains, till at last their deliverance comes with crash and roar and they are once more free to career in the air and light as dew or rain or cloud, and then again to be drawn into that cycle of transformation and caught and bound once more in glacier chains for another century.

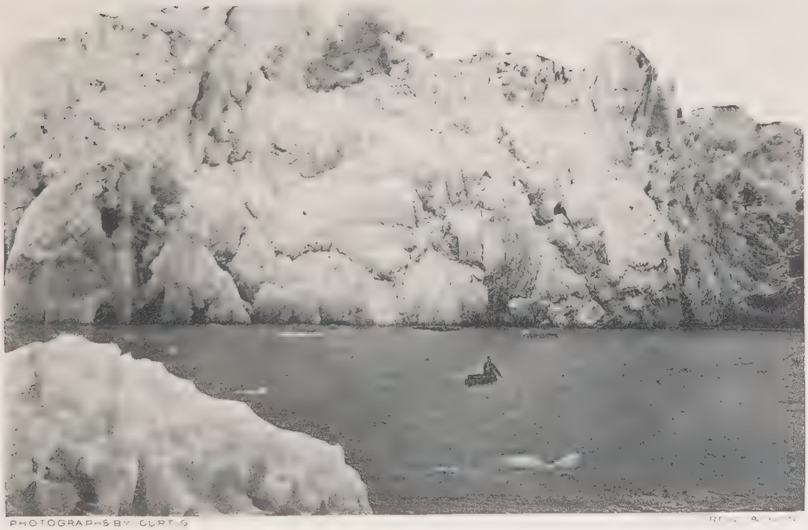


LOOKING DOWN ON FRONT OF MUIR GLACIER FROM EAST SIDE.

We lingered by the Muir and in adjacent waters five or six days, sending out botanical, zoological, and glacial expeditions in various directions; yes, and one hunting party to stir up the bears in Howling Valley. Howling Valley, so named by Muir, is a sort of coat tail pocket of the great glacier. It lies twenty or more miles from the front, behind the mountains. The hunters started off eagerly on the first afternoon of our arrival, with packers



EDGE OF MUIR GLACIER



PHOTOGRAPHS BY CURTIS [illegible]

FRONT OF MUIR GLACIER

JUST AFTER THIS WAS TAKEN, A HUGE BERG FELL OFF, THE WAVE ALMOST [illegible]
THE CANOE AND WASHING OVERBOARD A SERI[illegible]
VERY LARGE NEGATIVES OF THE GLACIER FRON[illegible]

and glistening Winchesters and boxes of ammunition, and we had little doubt that the *genius loci* of Howling Valley would soon change its tune.

Some of us the next afternoon were exploring the eastern half of the glacier, which is a vast prairie-like plain of ice, when we saw far off across the dim surface to the north two black specks, then two other black specks, and in due time still other black specks, and the conjecture passed that the hunters were returning, and that the heart of the mystery of Howling Valley had not been plucked out. Our reluctant conjectures proved too true. Just at nightfall the hunters came straggling in, footsore and weary and innocent of blood — soberer if not sadder, hardier if not wiser men. The undertaking involved more than they had bargained for. Their outward course that afternoon lay for a dozen miles or more across the glacier. They had traveled till near midnight and then rested a few hours in their sleeping bags upon the ice. One may sleep upon the snow in a sleeping bag, but ice soon makes itself felt in more ways than one. When the cold began to strike up through, the party resumed its march. Very soon they got into snow which became deeper and deeper as they proceeded. Hidden crevasses made it necessary to rope themselves

CAMP OF HARRIMAN PARTY ON MUIR GLACIER
FROM PHOTOGRAPH TAKEN AT 3 AM JUNE 9, 1899.

together, the new hunting shoes pinched and rubbed, the packs grew heavy, the snow grew deeper, the miles grew longer, and there might not be any bears in Howling Valley after all — Muir's imagination may have done all the howling — so, after due deliberation by all hands, it was voted to turn back.

It is much easier in Alaska to bag a glacier than a bear; hence our glacial party, made up of John Muir, Gilbert, and Palache, who set out to explore the head of Glacier Bay, was more successful than the hunters. They found more glaciers than they were looking for. One large glacier of twenty years ago had now become two, not by increasing but by diminishing; the main trunk had disappeared, leaving the two branches in separate valleys. All the glaciers of this bay, four or five in number, were found to have retreated many hundred feet since Muir's first visit, twenty years earlier. The explorers were absent from the ship three days on a cruise attended with no little peril.

During the same time an ornithological and botanical party of six or eight men was in camp on Gustavus Peninsula, a long, low, wooded stretch of land twenty miles below Muir Glacier. Here over forty species of birds, including sea birds, were observed and collected. The varied thrush or Oregon robin was common and its peculiar song or plaint, a long tapering whistle with a sort of burr in it, led Ridgway a long chase through the woods before he could identify the singer. Other song birds found were the Western robin, the two kinglets, a song sparrow, the dwarf hermit and russet-backed thrushes, the lutescent warbler, the redstart, the Oregon junco and a western form of the Savanna sparrow.

Gustavus Peninsula seems to be a recent deposit of the glaciers and our experts thought it not much over a century old. The botanists here found a good illustration of the successive steps nature takes in foresting or reforesting the land — how she creeps before she walks. The first shrub is a small creeping willow that looks like a kind of 'pusley.' Then comes a larger willow, less creeping; then two or more other species that become quite large upright bushes; then follow the alders and with them various herbaceous plants and grasses, till finally the spruce comes in and takes possession of the land. Our collectors found the first generation of trees, none of them over forty years old. Far up the mountain side at a height of about 2,000 feet they came to the limit of the younger growth and struck a well-defined line of much older trees, showing that within probably a hundred years an ice sheet 2,000 or more feet thick, an older and larger Muir, had swept down the valley and destroyed the forests.

CAMP ON POINT GUSTAVUS.

In the meantime the rest of us spent the days on and in the vicinity of the glacier, walking, sketching, painting, photographing, dredging, mountain climbing, as our several tastes prompted.

We were in the midst of strange scenes, hard to render in words, the miles upon miles of moraines upon either hand, gray, loosely piled, scooped, plowed, channeled, sifted, from 50 to 200 feet high; the sparkling sea water dotted with blue bergs and loose drift ice, the towering masses of almost naked rock, smoothed, carved, rounded, granite-ribbed and snow-crowned that looked down upon us from both sides of the inlet, and the cleft, toppling, staggering front of the great glacier in its terrible labor throes stretching before us from shore to shore.

We saw the world-shaping forces at work; we scrambled over plains they had built but yesterday. We saw them transport enormous rocks, and tons on tons of soil and debris from the distant mountains; we saw the remains of extensive forests they had engulfed probably within the century, and were now uncovering again; we saw their turbid rushing streams loaded with newly ground rocks and soil-making material; we saw the beginnings of vegetation in the tracks of the retreating glacier; our dredgers brought up the first forms of sea life along the shore; we witnessed the formation of the low mounds and ridges and bowl-shaped depressions that so often diversify our landscapes — all the while with the muffled thunder of the falling bergs in our ears.

We were really in one of the workshops and laboratories of the elder gods, but only in the glacier's front was there present evidence that they were still at work. I wanted to see them opening crevasses in the ice, dropping the soil and rocks they had transported, polishing the mountains, or blocking the streams, but I could not. They seemed to knock off work when we were watching them. One day I climbed up to the shoulder of a huge granite ridge on the west, against which the glacier pressed and over which it broke. Huge masses of ice had recently

PHOTOGRAPH BY CURTIS

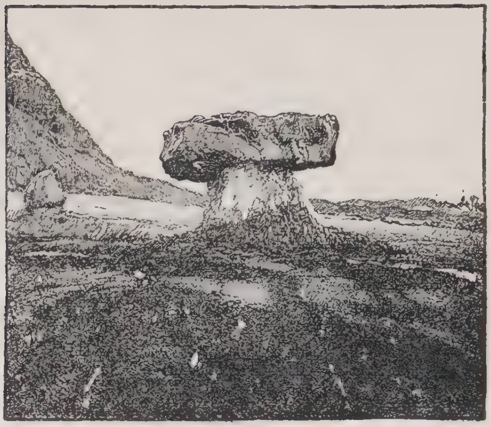
GILBO & CO

SUNSET ON MUIR INLET, GLACIER BAY

toppled over, a great fragment of rock hung on the very edge, ready to be deposited upon the ridge, windrows of soil and gravel and boulders were clinging to the margin of the ice, but while I stayed not a pebble moved, all was silence and inertia. And I could look down between the glacier and the polished mountain side; they were not in contact; the hand of the sculptor was raised as it were, but he did not strike while I was around; in front of me upon the glacier for many miles was a perfect wilderness of crevasses, the ice was ridged and contorted like an angry sea, but not a sound, not a movement anywhere.

CREVASSES ON MUIR GLACIER.

Go out on the eastern rim of the glacier where for a dozen miles or more one walks upon a nearly level plain of ice, and if one did not know to the contrary, he would be sure he saw the agency of man all about him. It is so rare to find nature working with such measure and precision. Here, for instance, is a railroad embankment stretching off across this ice prairie — a line of soil, gravel and boulders, as uniform in width and thickness as if every inch of it had been carefully measured — straight, level, three feet high and about the width of a single-track road. The eye follows it till it fades away in the distance. Parallel with it a few yards away is another line of soil and gravel more suggestive of a wagon road, only with what marvelous evenness is the material distributed; it could not have been dumped there from carts; it must have been sifted out from some moving vehicle.

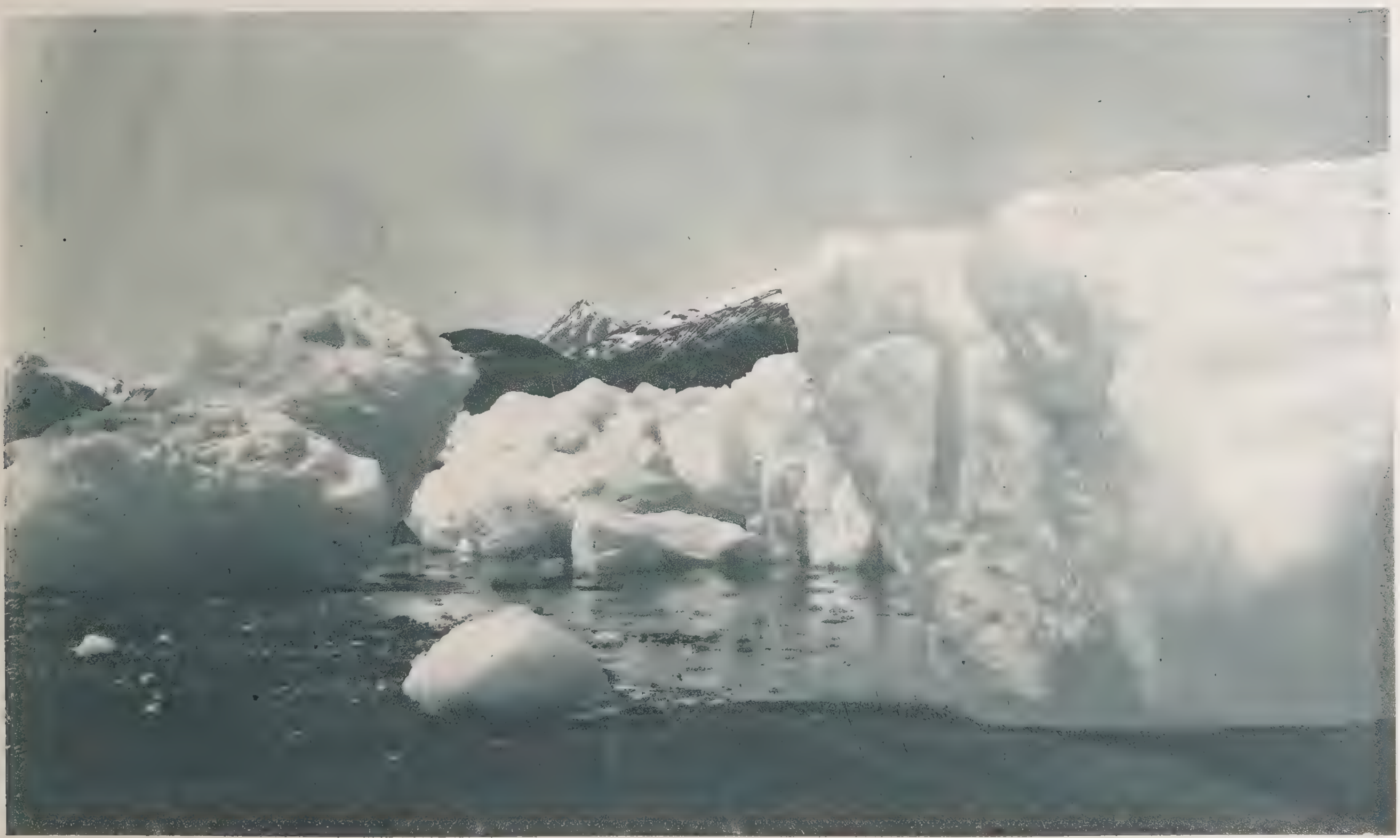


LARGE ROCK SUPPORTED ON COLUMN OF ICE, MUIR GLACIER.

Then you come upon a broad band of rocks and boulders, several rods in width, the margins perfectly straight and even and pointing away to the distant mountains. All these are medial moraines — material gathered from the mountains against which the ice has ground as it slowly passed, and brought hither by its resistless onward flow. Sometime it will all be dumped at the end of the glacier, adding to those vast terminal moraines which form the gravel plains that flank each side of the inlet. In looking at these plains and ridges and catching glimpses of the engulfed forests beneath them, one feels as if the mountains must all have been ground down and used up in supplying this world of material. But they have not. Peak after peak still notches the sky there in the north many thousand feet high.

The western part of the Muir Glacier is dead, that is, it is apparently motionless, and no longer discharges bergs from its end. This end, covered with soil and boulders, tapers down to the ground and is easily accessible. Only the larger more central portion flows and drops bergs into the sea, presenting the phenomenon of a current flowing through a pond, while on each side the water is all but motionless.

Not very long ago the Muir had a large tributary on the west, but owing to its retreating front this limb ap-



PHOTOGRAPH BY CURTIS JOHN ANDREW & SON

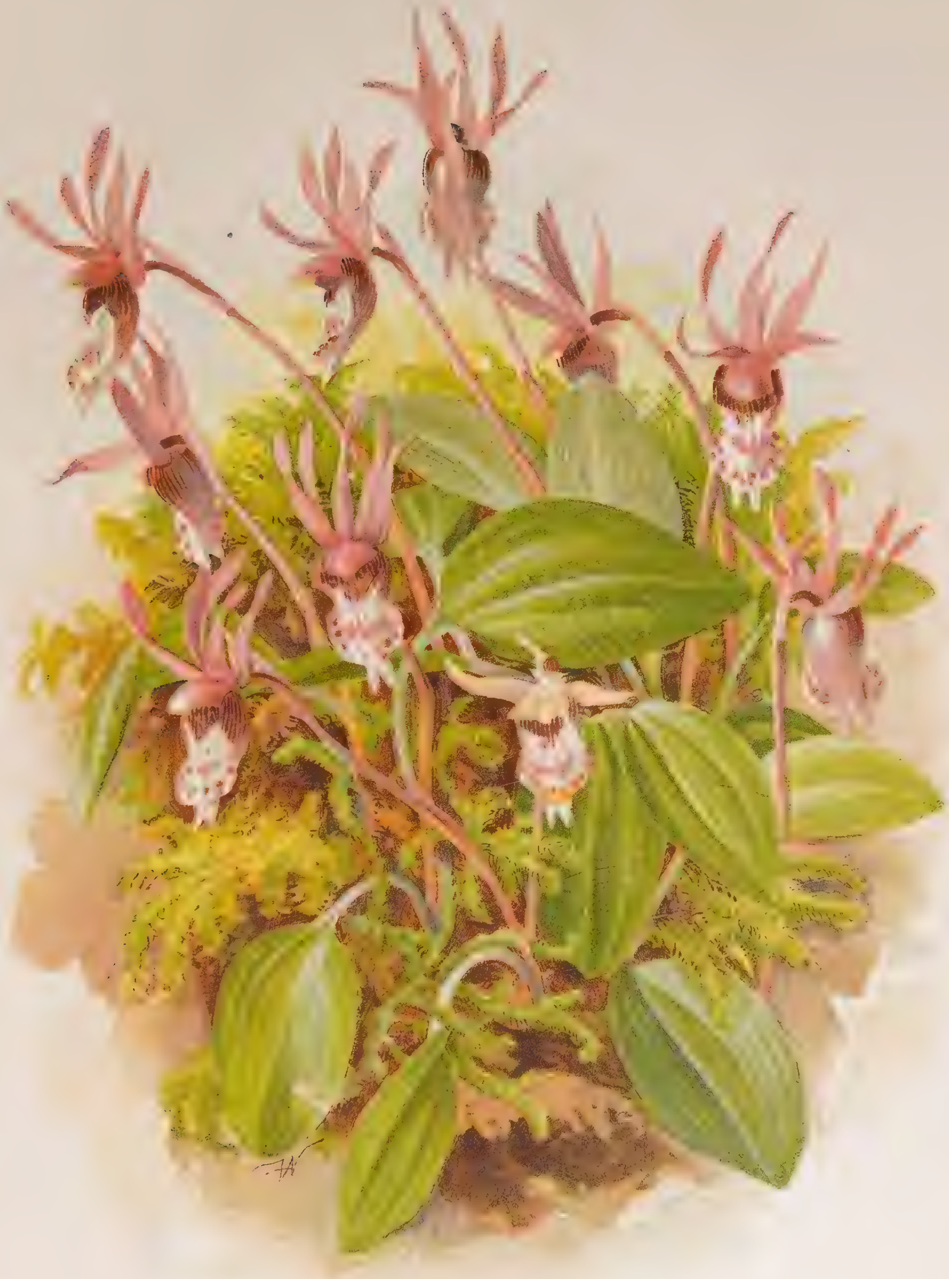
BERGS STRANDED AT LOW TIDE, NEAR MUIR GLACIER

pears to be cut off and separated from the main ice sheet by a boulder- and gravel-strewn ice plain a mile wide. The detached portion is called the Morse. One day three of us spent several hours upon the Morse. It is a mighty ice sheet in itself, nearly or quite a mile wide. It is dead or motionless, and is therefore free from crevasses. Its rim comes down to the gravel like a huge turtle shell and we stepped up on it without difficulty. At first it was very steep, but a few minutes climbing brought us upon its broad smooth gently sloping back. The exposed ice weathers rough, and traveling over it is easy. We found a few old crevasses, many deep depressions or valleys and several little creeks singing along deep down between blue vitreous walls; also wells of unknown depth and of strange and wonderful beauty. We came upon a moraine that suggested a tumble-down stone wall, quite as straight and uniform. It soon disappeared beneath the ice, showing what a depth of snow had fallen upon it since it started upon its slow journey from the distant mountains. We pushed up the gentle slope for several miles and until the snow began to be over our shoes, when we turned back. I had climbed hills all my life, but never before did I walk upon a hill of ice and stop to drink at springs that were deep crystal goblets.

The waste of the Morse Glacier is carried off by two large turbid streams that rush from beneath it and on their way to the inlet uncover a portion of a buried forest. About the buried forest our doctors did not agree. The timber, mostly spruce, was yet hard and sound, which might almost bring the event within the century. A sheet of gravel nearly 200 feet thick seems to have been deposited upon it suddenly. The trees, so far as exposed, had all been broken off ten or twelve feet from the ground, by some force coming from the west. In some places the original forest floor was laid bare by the water; the black vegetable mould and decayed moss had a fresh undisturbed look. Evidently no force had plowed or rubbed over the surface of this ground.

RESURRECTED FOREST, NEAR MUIR GLACIER.

While at the Muir we had some cloud and fog but no storms, and we had one ideal day. That was Sunday the 11th of June, a day all sun and sky—not a cloud or film to dim the vast blue vault—and warm, even hot, on shore; a day memorable to all of us for its wonderful beauty, and especially so to two of us who spent it on the top of Mt. Wright nearly 3,000 feet above the glacier. It was indeed a day with the gods, strange gods, the gods of the foreworld, but they had great power over us. The scene we looked upon was for the most part one of desolation—snow, ice, jagged peaks, naked granite, gray moraines—but the bright sun and sky over all, the genial warmth and the novelty of the situation, were ample to invest it with a fascinating interest. There was fatigue in crossing the miles of moraine; there was difficulty in making our way along the sharp crests of high gravel banks; there was peril in climbing the steep boulder-strewn side of the mountain, but there was exhilaration in every step and there was glory and inspiration at the top. Under a summer sun with birds singing and flowers blooming, we looked into the face of winter and set our feet upon the edge of his skirts. But the largeness of the view, the ele-



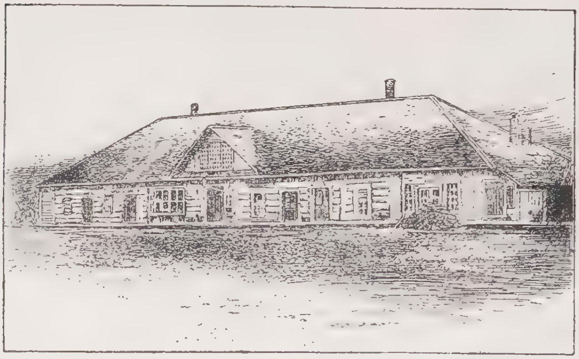
mental ruggedness, and the solitude as of interstellar space were perhaps what took the deepest hold. It seemed as if the old glacier had been there but yesterday. Granite boulders round and smooth like enormous eggs, sat poised on the rocks or lay scattered about. A child's hand could have started some of them thundering down the awful precipices. When the Muir Glacier rose to that height, which of course it did in no very remote past, what an engine for carving and polishing the mountains it must have been. Its moraines at that period — where are they? Probably along the Pacific coast under hundreds of fathoms of water.

Back upon the summit the snow lay deep and swept up in a wide sheet to a sharp inaccessible peak far beyond and above us. The sweet bird voices in this primal solitude were such a surprise and so welcome. There was the piercing plaint of the golden-crowned sparrow, the rich warble of Townsend's fox sparrow, and the sweet strain of the small hermit thrush. The rosy finch was there also, hopping upon the snow, and the pipit or titlark soared and sang in the warm lucid air above us. This last song was not much for music, but the hovering flight of the bird above these dizzy heights drew the eye strongly. It circled about joyously calling *chip*, *chip*, *chip*, *chip*, without change of time or tune. Below it a white ptarmigan rose up and wheeled about, uttering a curious hoarse croaking sound, and dropped back to his mate on the rocks. In keeping with these delicate signs of bird-life were the little pink flowers, a species of moss campion, blooming here and there just below the snow line, and looking to unbotanical eyes like blossoming moss. From the height, Muir Glacier stretched away to the north and soon became a sheet of snow which swept up to the tops of the chain of mountains that hemmed it in. The eastern half of it with its earth tinge looked like a prairie newly plowed and sown and rolled. The seed had been drilled in and the regular, uniform, straight lines were distinctly visible. Along the western horizon, looking down on the Pacific, the Fairweather Range of mountains stood up clear and sharp, Fairweather itself over 15,000 feet high. The snow upon these mountains doubtless lay in places over 100 feet deep.

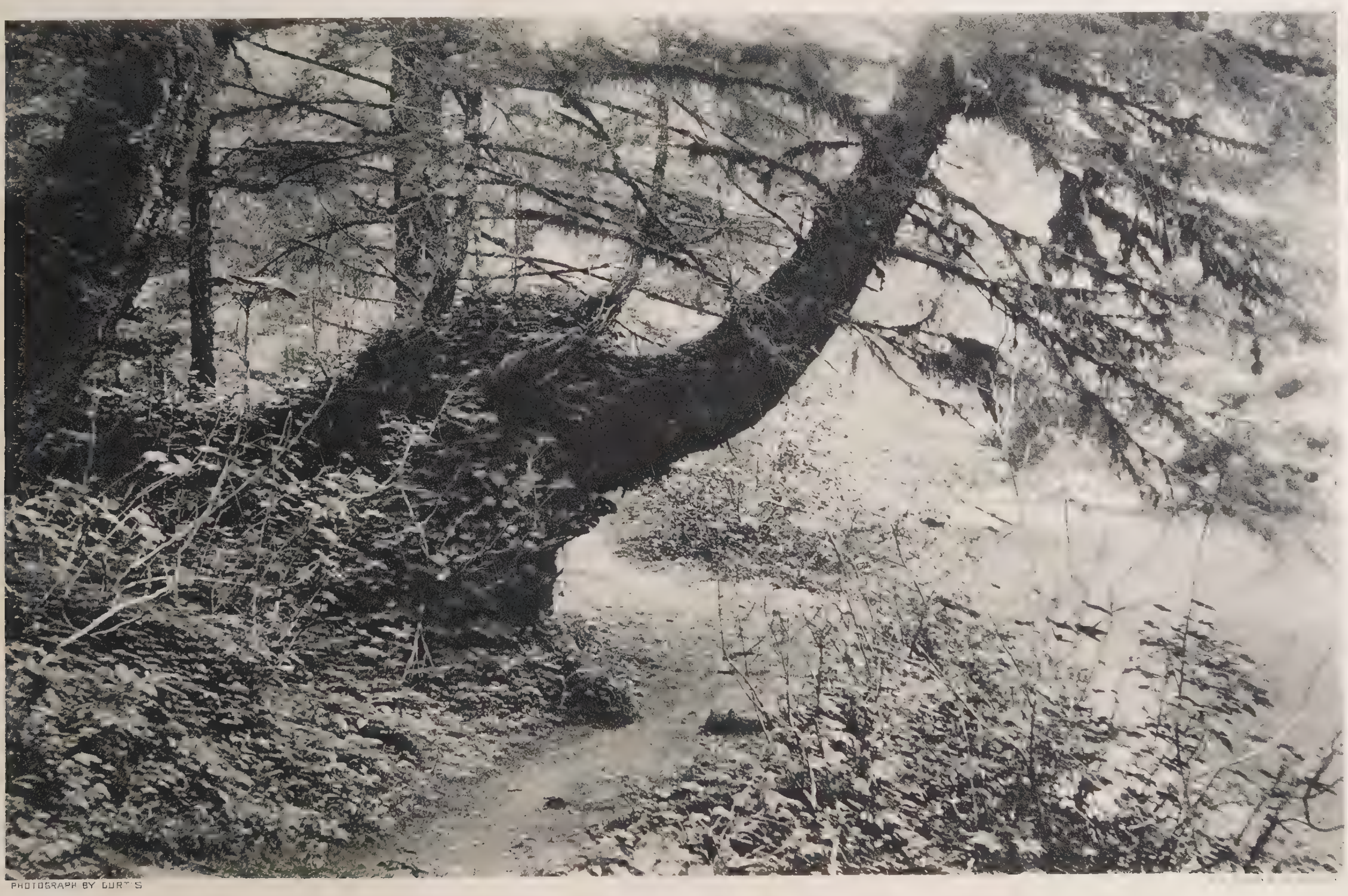
Glaciers are formed wherever more snow falls in winter than can melt in summer, and this seems to be the case on all these Alaska mountains on the Pacific coast. If by a change of climate or any other cause more snow should fall in the Hudson River valley in winter than could melt in summer, our landscapes would soon be invaded by glaciers from the Catskills. Farther north in Alaska, beyond the reach of the moisture-loaded Pacific air currents, the precipitation is less and there are no glaciers.

SITKA.

On the 13th of June we weighed anchor and after picking up our camping and exploring parties, steamed away toward Sitka, where we arrived under dripping skies the next morning. We had come from air and water streaked with icy currents, to much warmer and to much moister conditions. Sitka is said to be one of the rainiest spots on the coast, but the four days we passed there were not so bad: sun and cloud and spurts of rain



OLD RUSSIAN BARRACKS, SITKA.



PHOTOGRAPH BY CURTIS

Footpath along Indian River, Sitka

each day but no considerable downpour. We came into the island-studded and mountain-locked harbor from the north and saw the town with its quaint old government buildings and its line of Indian houses close to the beach, outlined against a near-by background of steep high spruce-covered and snow-capped mountains, with the white vol-

TREE-CAPPED ISLETS NEAR SITKA.

REAR VIEW OF GREEK CHURCH, SITKA.

canic cone of Edgecombe 3,000 feet high towards the open ocean on our right.

People actually live in Sitka from choice, and seem to find life sweet. There are homes of culture and refinement there. Governor Brady is a Yale graduate, and his accomplished wife would shine in any society. At a reception given us by the Governor, we met teachers from New England and people who keep in touch with current literature. A retired naval officer told us he liked the Sitka climate and life the best of any he had found. He and his family throve the best there. We spent the time there after the usual manner of tourists: walking about the town, visiting the Indian village, the museum, the Greek church, going to the Hot Springs, a few hours' sail to the south, exploring Indian River, a large ideal trout stream in appearance, making a trip to some near-by mines, and climbing the mountains. It was not a good place for our collectors; there were but few birds and they

ISLANDS NEAR SITKA.

RUSSIAN BLOCKHOUSE.

GREEK CHURCH, SITKA.

were very wild. Our mammal collectors put out 100 small traps and caught only two mice. I was fortunate enough to see and hear the water ouzel along Indian River, a bird like a big water-colored pebble with a liquid bubbling song, caught from the currents about it. Here also I saw the golden-crowned kinglet, the varied thrush, the russet-backed thrush and the rufous chickadee. Ravens were very common everywhere in the town and about it, and were talking and croaking all the time. Often a solitary bird seemed to be soliloquizing and repeating over to himself every note he knew. One day a hunting party, with Indian guides and dogs, visited one of the islands in quest of deer; the only deer that fell to their rifles was killed by Mr. Harriman's eldest daughter, Mary.

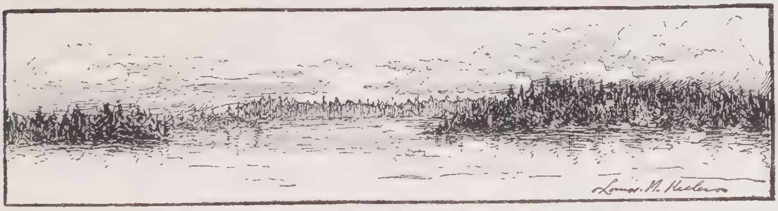
RUSSIAN CEMETERY AT SITKA.

It was a surprise to see the vast spruce forests about Sitka almost untouched by the ax, except on a small area back of the town. In the forest near the mouth of Indian River I noticed a few huge stumps twelve feet high, as if the ax that felled them had been wielded by giants. They had probably been cut from raised platforms. Some of them were very old, doubtless the work of the Russians. Sitka is very prettily situated; a ring of high dark snow-topped mountains just back of it, and a sparkling bay, dotted with islands, rock-based and tree-crowned, in its front, with white volcanic cones in the distance. About the only bit of smooth dirt road we saw in Alaska we walked on here for the distance of a mile, connecting the park with the town.

IN YAKUTAT BAY.

After four warm humid days at Sitka we turned our faces for the first time toward the open ocean, our objective point being Yakutat Bay, a day's run farther north. The usual Alaska excursion ends at Sitka, but ours was now only fairly begun. The Pacific was very good to us and used us as gently as an inland lake, there being only a long low sleepy swell that did not disturb the most sensitive. The next day, Sunday the 18th, was mild and gentle. Far at sea on our left we looked into a world of sunshine, but above us and on our right lay a heavy blanket of clouds, enveloping and blotting out all the upper portions of the great Fairweather Range. We steamed all day a few miles off shore, hoping that the great peaks, some of them 15,000 to 16,000 feet high, would reveal themselves, but they did not. We saw them only from the waist down as it were, with their glaciers like vast white aprons flanked by skirts of spruce forests. One of these glaciers, La Perouse, came quite down to the sea, with a front a mile or more long and 200 feet high. At one point it had cut into the edge of the forest and shoved and piled up the trees and soil as a heavy vehicle shoves and folds up the turf. This, of course, showed that quite recently the glacier had had a period of advance or augmentation and had encroached upon its banks. We stopped an hour in front of it and put a party ashore, but they learned little that could not be divined from the ship. They found a heavy surf running, and did not get through it on their return without an acquaintance with the Pacific more intimate than agreeable. All day long we were in sight of glaciers, usually two or three at a time, some of them immense, all the offspring of the great Fairweather Range. Now and then the back of one some miles inland would show above a low wooded ridge, a line of white above an expanse of black, like the crest of a river about to overflow its banks. One broad ice slope I recall which, with its dark straight lines of moraine dividing it into three equal portions, suggested a side-hill farm in winter with the tops of the stone walls showing above the snow. It had a friendly home look to me.

WEST END OF LA PEROUSE GLACIER.



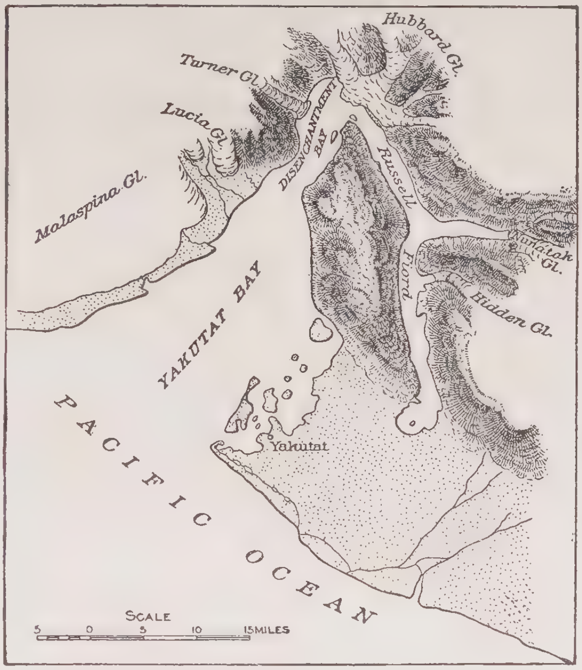
LOW FORESTED SHORES ON SOUTH SIDE OF YAKUTAT BAY.

On the morning of the 19th we were at anchor in front of the Indian village in Yakutat Bay. This bay is literally like an arm, a huge arm of the sea, very broad and heavy at the shoulder, much flexed at the elbow, where it breaks into the St. Elias Range, and long and slender in the forearm which is thrust through the mountains till it nearly reaches the sea again. Eight or ten comfortable frame houses, with a store and post-office, made up the Indian village known on the map as Yakutat. It sat low on a wooded point just to one side of the broad entrance to the bay. There were upwards of a hundred people there, looked after by a Swedish missionary. We soon proceeded up the Bay, with the great Malaspina Glacier on our left, and put off three hunting and collecting parties to be absent from the ship till Thursday. The event of this day was the view of Mt. St. Elias which was vouchsafed us for half an hour in the afternoon. The base and lower ranges had been visible for some time, bathed in clear sunshine, but a heavy canopy of dun-colored clouds hung above us and stretched away toward the mountain, dropping down there in many curtain-like folds, hiding the peak. But the scene-shifters were at work; slowly the heavy mass of clouds that limited our view yielded and was spun off by the air currents

YAKUTAT VILLAGE.

till at last the veil was completely rent, and there, in the depths of clear air and sunshine, the vast mass soared to heaven.

There is sublimity in the sight of a summer thunderhead with its great white and dun convolutions rising up for miles against the sky, but there is more in the vision of a jagged mountain crest piercing the blue at even a lesser height. This is partly because it is a much rarer spectacle, but mainly because it is a display of power that takes greater hold of the imagination. That lift heavenward of the solid crust of the earth, that aspiration of the insensate rocks, that effort of the whole range, as it were, to carry one peak into heights where all may not go—every lower summit seeming to second it and shoulder it forward till it stands there in a kind of serene astronomic solitude and remoteness — is a vision that always shakes the heart of the beholder.



MAP OF YAKUTAT BAY, ALASKA.

Later in the day we continued our course up the Bay through much drift ice and were soon in sight of two large glaciers, the Turner and the Hubbard. Both presented long high palisades of ice to the water, like the Muir, but were far less active and explosive. The Hubbard Glacier is just at the sharp bend of the elbow, a regular 'fiddler's' elbow where the bay, much narrowed, turns abruptly from northeast to south. Here, with a Yakutat Indian for pilot, we entered upon the strange and weird scenery of Russell Fiord and into waters that no ship the size of ours had before navigated. This part of the bay is in size like the Hudson and about sixty miles in length, but how wild and savage! A succession of mountains of almost naked rock, now scored and scalloped and polished by the old glaciers, now with vast moraines upon their sides, or heaped at their feet, which the rains and melting snows have plowed and ribbed and carved into many fantastic forms There was an air of seclusion and remoteness about it all, as if this had been a special playground of the early ice gods, a nook or alley set apart for them in which to indulge every whim and fancy. And what could be more whimsical or fantastic than yonder glacier playing the mountain goat,

CASCADING GLACIER, RUSSELL FIORD.

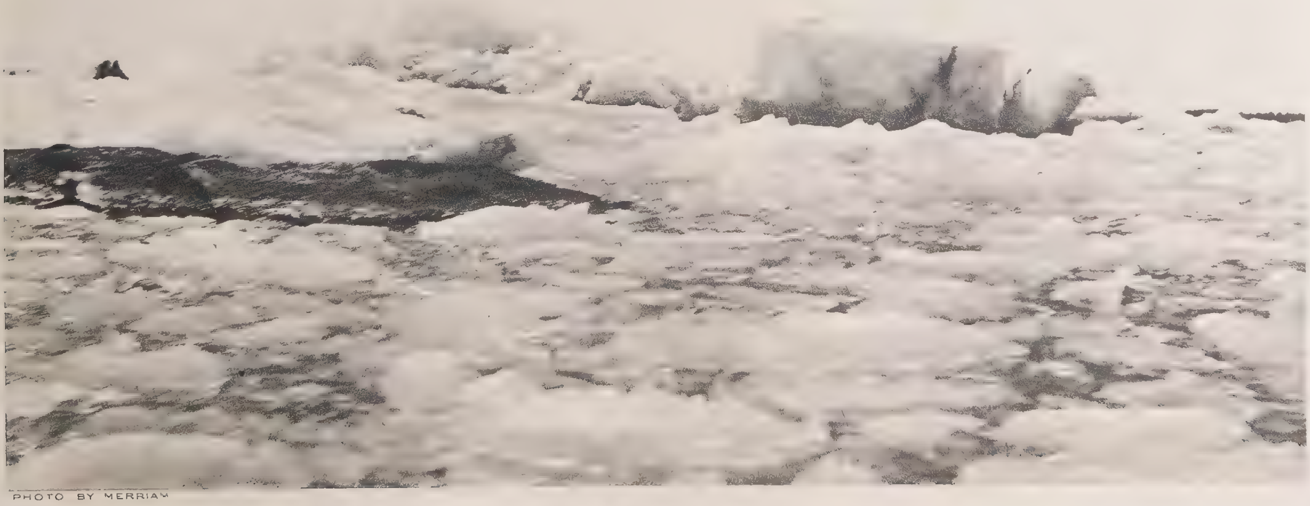


PHOTO BY MERRIAM

DRIFT ICE, YAKUTAT BAY

clinging to the steep sides of the mountain or breaking over its cliffs and yet falling not, hanging there like a congealed torrent, a silent and motionless shadow. The eye seems baffled. Surely it is plunging or will plunge the next second; but no, there it is fixed; it bends over the brink, it foams below, but no sound is heard and no movement is apparent. You see the corrugated surface where it emerges from its great snow reservoir on the mountain summit; it shows deep crevasses where it sweeps down a steep incline, then curves across a terrace, then leaps in solid fixed foam down the face of the cliff, to which it seems bound as by some magic.

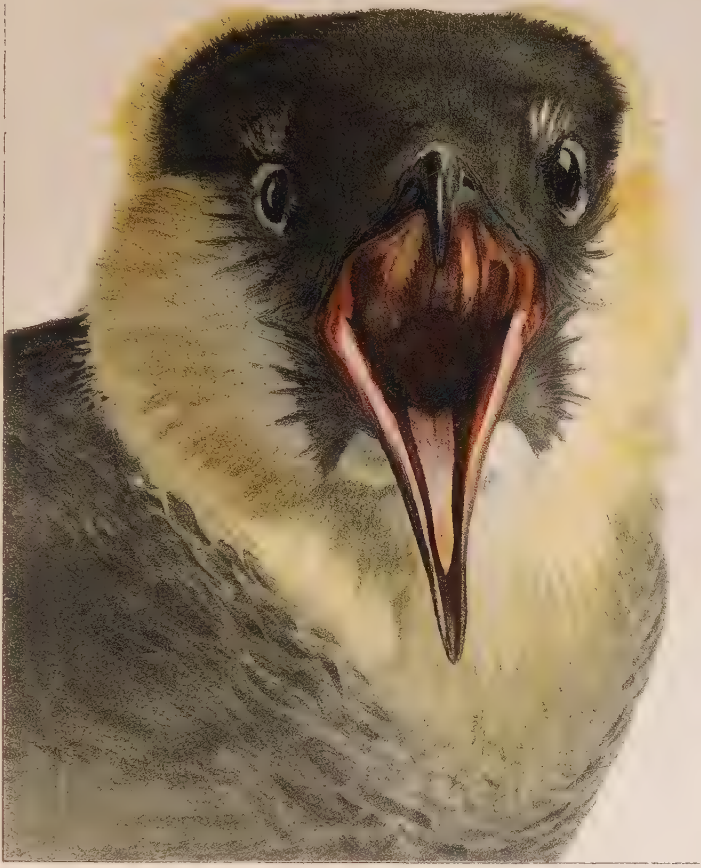
SHIP AT EDGE OF DRIFT ICE, YAKUTAT BAY.

These precipice glaciers apparently move no faster than those in the valley. It is in all cases a subtle invisible movement like that of the astronomic bodies. It would seem as if gravity had little to do with it. They do not gain momentum like an avalanche of snow or earth but creep so slowly that to the looker-on they are as motionless as the rocks themselves. The grade, the obstacles in the way, seem to make no difference. One would think that if a mass of ice, weighing many thousand tons, hanging upon the face of a mountain wall steeper than a house roof, detached itself from the rest at all and began to move, it would gain momentum and presently shoot down, as the loosened ice and snow do from our slate roofs. But it does not. If the temperature of the rocks were suddenly raised as in the case of the roof, no doubt the glacier would shoot, but it is not. The under surface of the ice is probably perpetually congealed and perpetually loosened, and the crystallization is constantly broken and constantly reformed, so that its motion is more a creeping than a sliding. The carving and sculpturing of the rocks is of course done by the pebbles and boulders beneath the ice, and these must slide or roll.

We followed the bay or inlet to its head and anchored for the night in the large oval that marks its termination. We were about fifteen miles from the Pacific, being separated from it by a low level moraine of the old glaciers. We were now surrounded by low wooded shores from which in the long twilight came the sweet vespers of the little hermit thrush.

On the 20th another hunting party went out from the ship and with an Indian guide climbed and threaded the snow-covered mountains nearly all day in quest of bears, but came back as empty handed as they set out. The ship in the meantime steamed back ten miles to a side arm of the bay at the head of which was Hidden Glacier, so called because it was hidden from view behind a shoulder of the mountain. A broad gravel bed with a stream winding through it, which the retreating glacier had uncovered, was alone visible from the ship. While Gannett and Gilbert proceeded to survey and map

CAMP OF HUNTING PARTY ON NORTH SHORE OF YAKUTAT BAY.



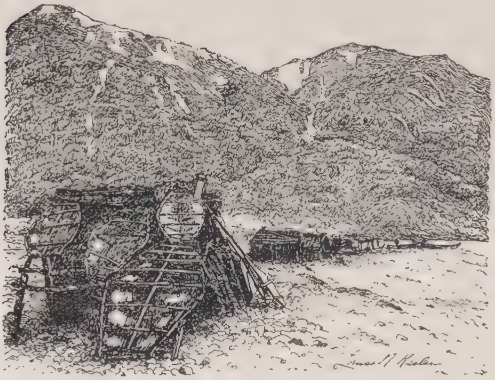
[illegible]

[illegible]

the glacier, many of us wandered upon shore amid a world of moraines and gravel banks. In the afternoon we proceeded to the vicinity of the Hubbard Glacier where the ship took a fresh supply of water from a mountain torrent, while the glacier hunters viewed the Nunatak Glacier, and the mineralogists with their hammers prowled upon the shore. My own diversion that afternoon was to climb one of the near mountains to an altitude of about 2,500 feet, where I looked down at a fearful angle into the sea, and where I found my first titlark's nest. The bird with her shining eyes looked out upon me, and upon the sublime scene, from a little cavity in a mossy bank near the snow line. Her nest held six dark-brown eggs. Some pussy willows near by were just starting. I thought to reach the peak of the mountain up a broad and very steep band of snow, but I looked back once too often. The descent to the sea was too easy and too fearful for my imagination, so I cautiously turned back. In a large patch of alders at the foot of the mountain four or five species of birds were nesting and in song. The most welcome sight to me was a solitary barn swallow skimming along as one might have seen it at home — no barns within hundreds of miles, yet the little swallow seemed quite at her ease.

CANOE IN DRIFT ICE, YAKUTAT BAY.

While we were anchored here we had another brief vision of extra mountain grandeur. The fair weather divinities brushed aside the veil of clouds and one of the lofty peaks to the north, probably Vancouver, stood revealed to us. We yielded to its mighty spell for a few moments and then the cloud curtain again dropped.



SEAL HUNTERS' CAMP, YAKUTAT BAY. (STRETCHED SKINS OF HAIR SEALS IN FOREGROUND.)

The next day we left Russell Fiord and anchored before an Indian encampment below Haenke Island, on the south side of the head of Yakutat Bay. The Indians had come up from their village below, and some of them, we were told, from as far away as Sitka. They were living here in tents and bark huts and hunting the hair seal amid the drifting icebergs that the Turner and the Hubbard cast off. This was their summer camp; they were laying in a supply of skins and oil against their winter needs. In July they go to the salmon streams and secure their stores of salmon. During these excursions their village at Yakutat is nearly deserted. The encampment we visited was upon the beach of a broad gravelly delta flanked by high mountains. It was redolent of seal oil. The dead carcasses of the seals lay in rows upon the pebbles in front of the tents and huts. The women and girls were skinning them and cutting out the blubber and trying it out in pots over smouldering fires, while the crack of the Winchesters of the men could be heard out amid the ice. Apparently their only food at such times is seal meat, with parts of the leaf or stalk of a kind of cow parsnip, a coarse rank plant that grows all about. The Indian women frowned upon our photographers and were very

YAKUTAT INDIANS PADDLING.

averse to having the cameras pointed at them. It took a good deal of watching and waiting and maneuvering to get a good shot. The artists with their brushes and canvas were regarded with less suspicion.

JAEGER.

The state of vegetation in Yakutat Bay was like that of early May in New York, though the temperature was lower. Far up the mountain side near the line of snow the willows were just pushing out. At their base the columbine, rock loving as at home, but larger and coarser flowered, was in bloom, and blue violets could be gathered by the handful. Back of the encampment were acres of lupine just bursting into flower. It gave a gay, festive look to the place. Red-vested bumble bees were working eagerly upon it. The yellow warbler was nesting in the alders near by. New birds added to our list from these shores were the pine grosbeak, the Arctic tern, and the robber jaeger. No large game was secured by our hunters in Yakutat Bay, though Captain Kelly declared he was at one time so near a bear that he could smell him. The bear undoubtedly got a first smell of the Captain.

OUR SHIP, THE GEORGE W. ELDER.

Our party had now been a month together and had assumed the features of a large and happy family on a summer holiday cruise. We were of diverse interests and types of character, yet one in the spirit of true comradeship. This fortunate condition was largely due to the truly democratic and manly character of the head of the expedition, Mr. Harriman, and to the equally cheerful and obliging temper of Captain Doran. The pleasure of the party was the pleasure of our host and of the Captain. The ship was equally at the service of men who wanted to catch mice or collect a new bird, as of those who wanted to survey a glacier or inlet or shoot a bear. One day it made a voyage of sixty miles to enable our collectors to take up some traps, the total catch of which proved to be nine mice. The next day it was as likely to go as far to enable Ritter and Saunders to dredge for new forms of sea life, or Devereux to inspect some outcropping of copper ore. Early in the voyage our committee on entertainment got up a course of lectures. Nearly every night at eight o'clock, some one of our college professors or government specialists held forth upon the upper deck or in the Social Hall. One night it was Dall upon the history or geography of Alaska; then Gilbert upon the agency of glaciers in shaping the valleys and mountains, or upon the glaciers we had recently visited; then Brewer

SUNSET, YAKUTAT BAY.

upon climate and ocean currents, or Coville upon some botanical features of the regions about us, or Ritter upon the shore forms of sea life, or Emerson upon volcanoes and lava beds, or John Muir on his experiences upon the glaciers and his adventure with his dog Stikeen in crossing a huge crevasse on a sliver of ice, or Charles Keeler on the coloration of birds, or Fuertes on bird songs, or Grinnell on Indian tribes and Indian characteristics, and so on. On Sunday evenings Dr. Nelson conducted the Episcopal service and preached a sermon, while at all times books and music and games added to the attraction of the Social Hall.

PRINCE WILLIAM SOUND.

After several days in Yakutat Bay we steamed northward again, bound for Prince William Sound. The fog and cloud hid the St. Elias Range, but the great Malaspina Glacier was visible on our right. This is the largest of the Alaska glaciers, covering 1,500 square miles. It has a front of fifty miles on the sea, and runs back thirty miles to the St. Elias Range from which it is fed. It is a vast plain of ice with lakes and rivers, and with hills of rocks and gravel that have trees and alders growing upon them. One of our hunting parties touched the skirts of it and saw where the earth and alders had slid off over quite an area, exposing the ice. Its Yakutat side seems stagnant; it no longer discharges bergs into the sea and will in time probably drop its vast burden of medial moraine upon the ground beneath. We caught glimpses of its numerous feeders below the clouds along the base of St. Elias, but of the glacier itself we saw only the earth-covered margin it presents to the sea. The discharge of roily water from beneath it is so great that it colors the sea over an area equal to its own; 'glacier milk' some one called it, and the Pacific had a milky tinge for thirty miles off shore.

BLACK-FOOTED ALBATROSS.

I must not forget the albatross that found us out and followed our ship when we had been but a few hours at sea, wheeling around us close to the water, coming and going, now on one side, now on the other, slanting and curving, and all on straight unbending wing. Its toilless, effortless flight and its air of absolute leisure were very curious, strange, solitary, weird — it seemed like the spirit of the deep taking visible form and seeking to weave some spell upon us or lure us away to destruction. Never before had I seen flying so easy and spontaneous — not an action, not a thought, not an effort, but a dream. What a contrast to the flight of the Arctic tern which we first saw in Yakutat Bay, a bird with long sickle-shaped wings with which it fairly rept the air. The flight of the albatross was a series of long, graceful strokes, unlike that of any other bird I have seen.

About noon on the 24th amid fog and light rain, we sighted Middleton Island on our starboard, when the ship turned her head sharply northward toward the entrance to the sound. In a couple of hours we ran out of the fog into clear skies and were soon steaming across the great sound in warm sunshine. Our route was a devious one: past islands and headlands, then over the immense expanse of the open water with a circle of towering snow-capped mountains far off along the horizon, then winding through arms and straits, close to tree-tufted islands and steep spruce-clad mountains, now looking between near-by dark forested hills upon a group of distant peaks white as midwinter, then upon broad low wooded shores with glimpses of open meadow-like glades among the trees, suggesting tender grass and grazing herds, till in the early evening we sighted a little cluster of buildings peeping out of the forest at the base of a lofty mountain. This was Orca where there is a large salmon cannery and a postoffice. Here we anchored for the night. In the long twilight some of our party climbed to the top of the mountain, 2,500 feet in height, and brought back a native heather, or bryanthus, in bloom. Others of us wandered upon the beach and engaged in conversation with some gold seekers just out from Copper River. They were encamped here waiting for a steamer to take them away, and for funds from friends at home to enable them to get away. It was a story of hardships and disappointment that they had to tell us — yes, and of scurvy and death. Over 3,000 men had gone into the Copper River region a year or more before on the wildest, vaguest rumor of gold. They had gone in hurriedly and slyly, as it were, so as to be ahead of the crowd. Each man had taken supplies to last him a year at least. Now they were coming out destitute and without one cent's worth of gold; many of them had died. Scurvy had broken out among them, had swept away scores of them and had lamed and disabled others. Their toils and privations had been terrible; snow, glaciers, mountains, swollen rivers had blocked their way. Most of them had abandoned their unconsumed supplies and extra blankets, content to get out with their lives. They were from the East and from the West, lumbermen from Maine and Pennsylvania and old miners from California and Colorado. They were a sturdy, sober-

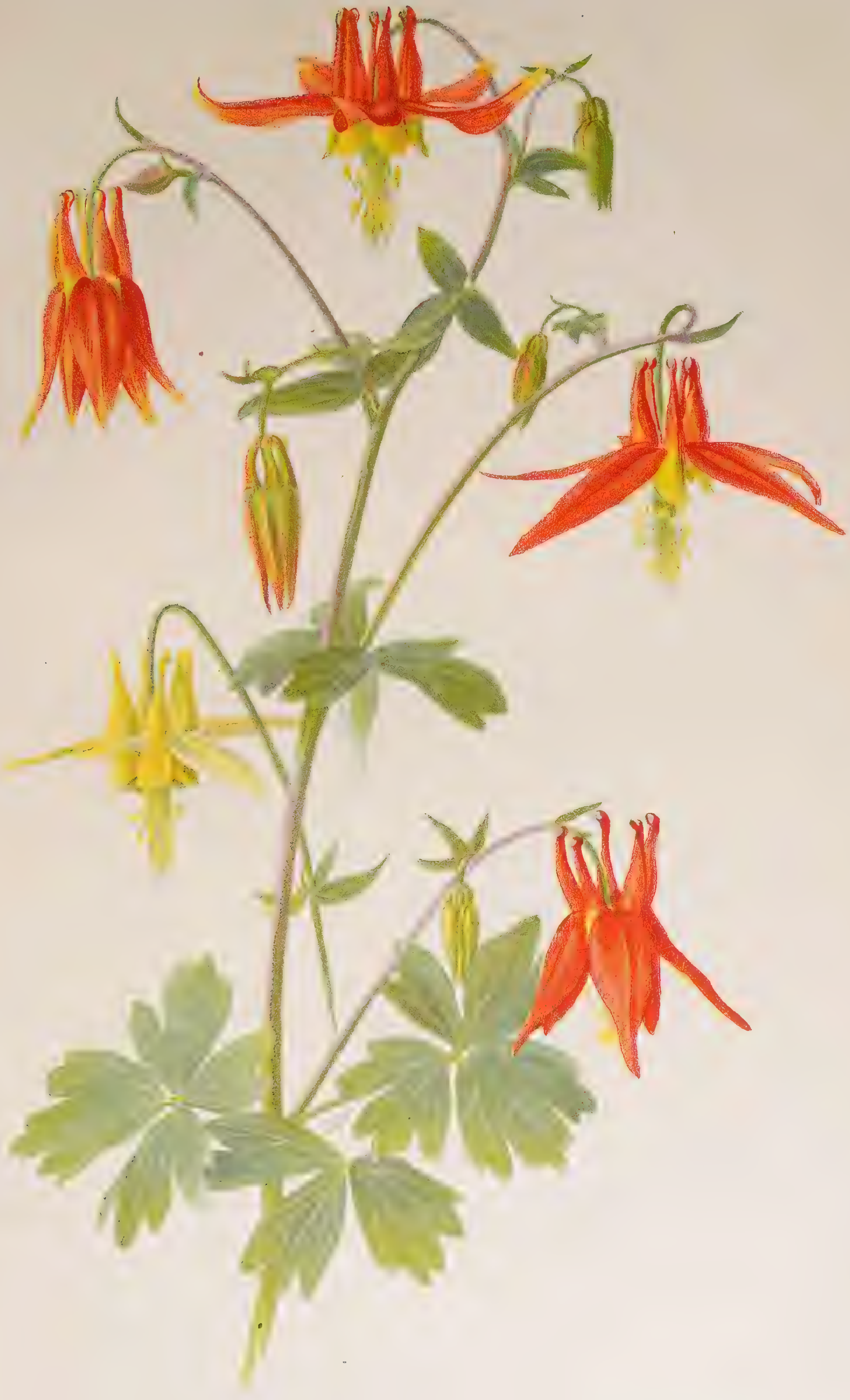
SALMON CANNERY AT ORCA.

looking set of men that we saw, no nonsense about them. Such hardships and disappointments seem to sweep away everything put on and meretricious in a man, and uncover and bring out the bedrock of character, if there is any in him. In this crowd two large powerful men, father and son, were especially noticeable. The father, a man probably of sixty-five years, had nearly died with scurvy and was still very lame, and the tenderness and solicitude of the son towards him warmed my heart. Homely, slow, deliberate men but evidently made of the real stuff. These stranded men were penniless and were depending upon the charity, or the willingness to trust, of the steamboat company to take them home to San Francisco. I was glad when I saw them depart on the steamer the next day. Alaska is full of such adventurers ransacking the land; we heard of them at several other points; men looking for new Klondikes, exploring remote corners, going eagerly and quietly into the wilderness, crossing glaciers, rivers and mountains, hoping to be the first in new and rich fields.

Sunday the 25th was another day of great beauty. We spent the main part of it steaming across the sound toward some of the more remote inlets. It was an ideal day, an ideal sail, a day to bask in the sunshine upon the upper deck and leisurely contemplate the vast shifting panorama of sea and islands and wooded shores and

COLUMBIA GLACIER FROM A DISTANCE.

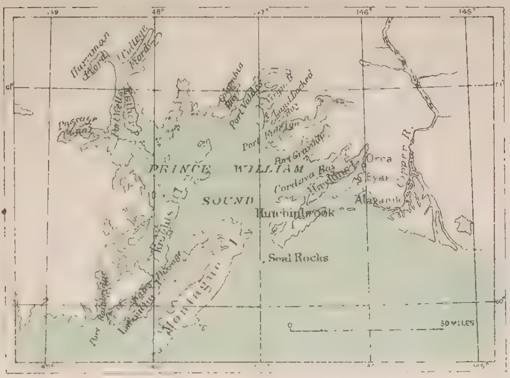
917.98 - B93



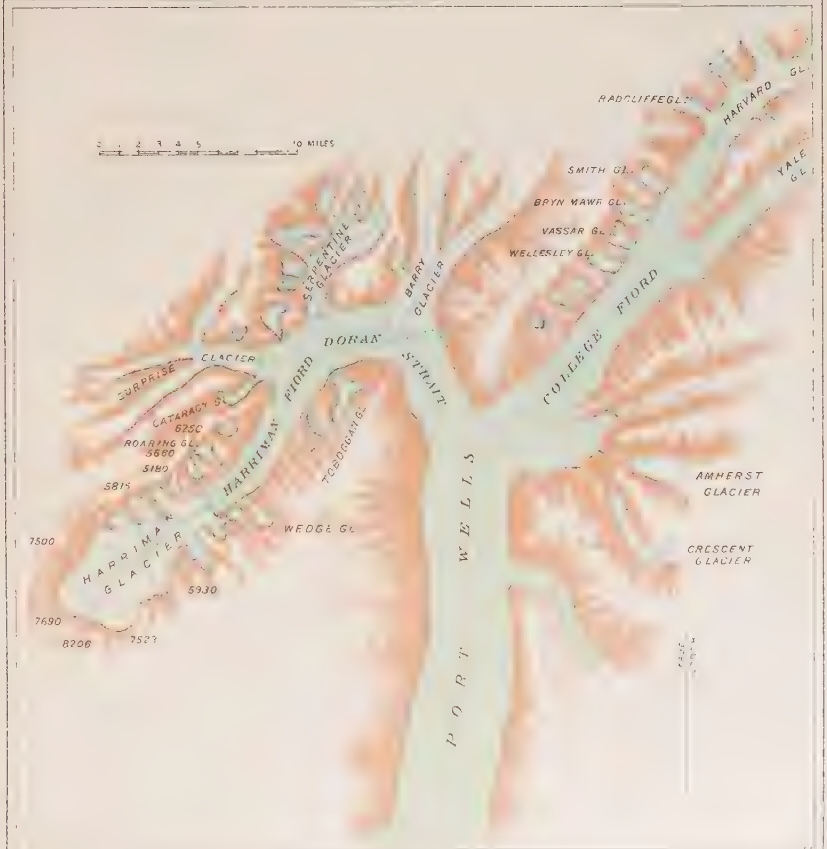
COLUMBINE

Aquilegia formosa FISCH, SITKA, Alaska June 26, 1900

THE GRIGNARD LITHO. CO. N.Y.



PRINCE WILLIAM SOUND

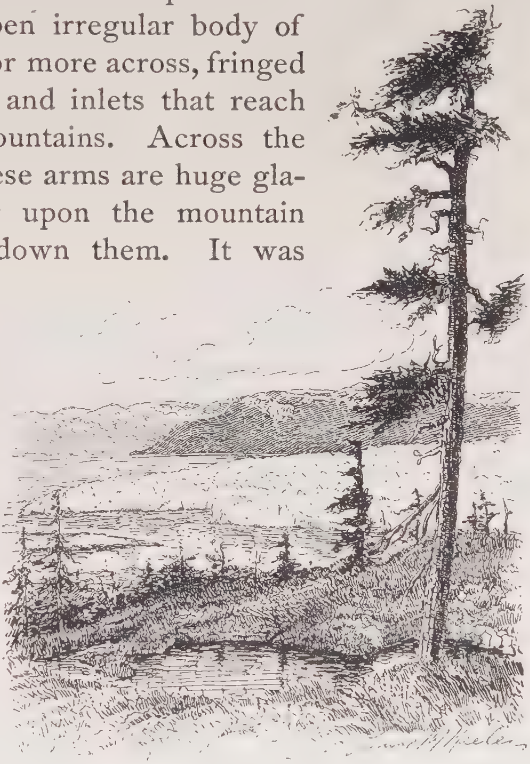


A. HOEN & CO. LITHOCAUSTIC

SKETCH OF PORT WELLS

towering peaks spread before us on every hand — a day that gave us another feast of beauty and sublimity and that stands out in the memory unforgetable! We were afloat in an enchanted circle; we sailed over magic seas under magic skies; we played hide and seek with winter in lucid sunshine over blue and emerald waters — all the conditions, around, above, below us were most fortunate.

Prince William Sound is shaped like a great spider: an open irregular body of water eighty miles or more across, fringed by numerous arms and inlets that reach far in amid the mountains. Across the head of most of these arms are huge glaciers; others hang upon the mountain sides or cascade down them. It was toward the head of one of these inlets that we were now bound. In the afternoon we reached its head and saw another palisade of shattered ice, about two hundred feet high and four miles long, barring our way. We named this the Columbia Glacier. Its front was quite as imposing as that of the Muir, but it was less active; apparently no large blue bergs are born out of its depth, for the reason, doubtless, that its depth is not great. On a wooded island near its front we left two of our geologists to survey and report upon it. At eight o'clock that



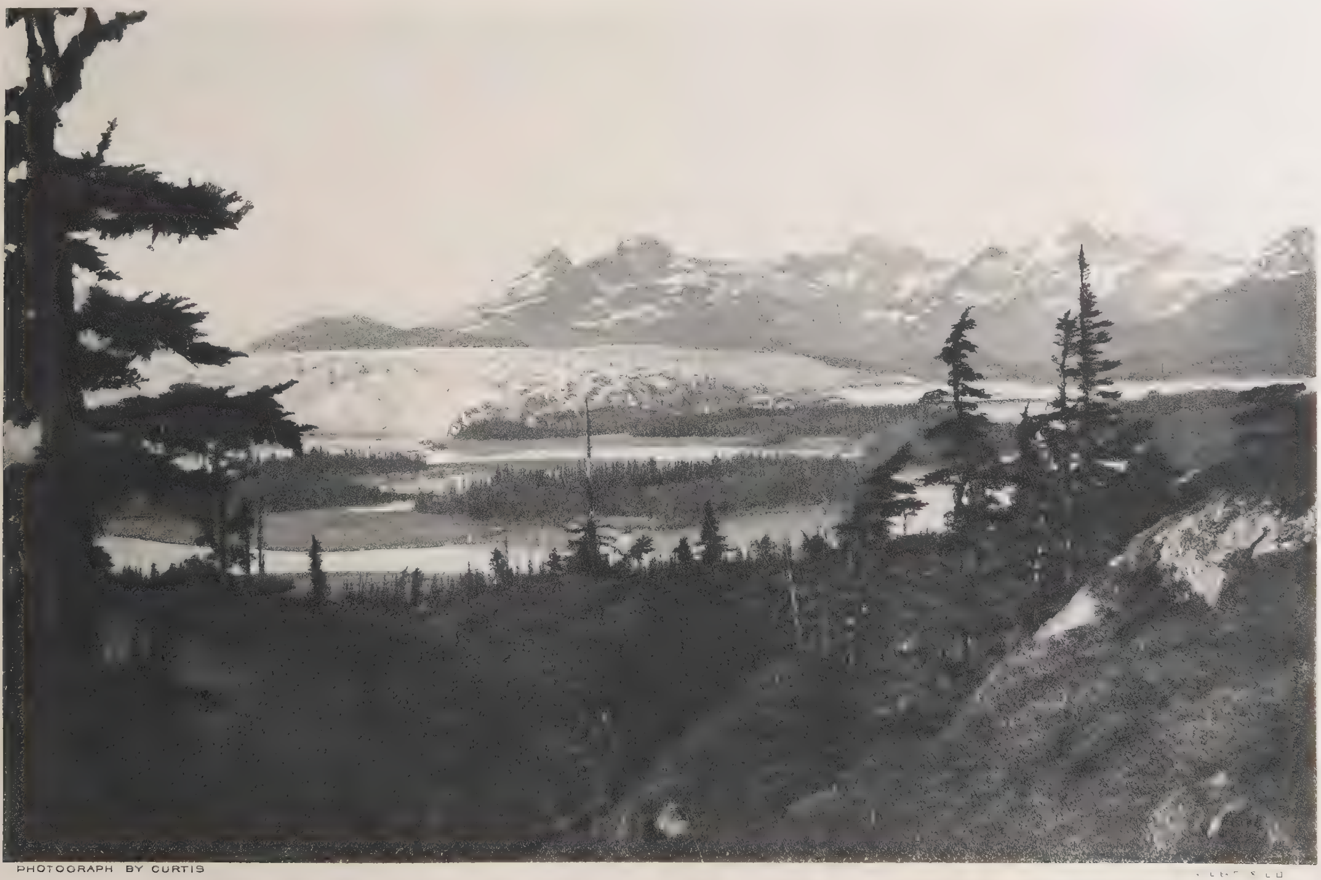
PART OF FRONT OF COLUMBIA GLACIER.

Sunday evening we were at anchor in Virgin Bay, with low, partly wooded islands on the one hand, and sloping open shores at the foot of tall mountains on the other. Two or three small houses were seen scattered along the shore on the margin of these broad natural grassy clearings. Copper ore had been found here and there near the cabins of the prospectors. On two of the islands near us were fox farms. One of the farmers came off to see us in his boat and talked intelligently about his enterprise. His foxes would swim to an adjoining island a few hundred yards away, so his brother had established a fox farm upon it. Blue foxes are the species cultivated; their main food in winter was dried fish caught during the summer out of the surrounding waters. Each island contained several hundred acres, mostly covered with spruce. Upon the subject of profits he could not yet speak, as the enterprise was new. We here saw our first Eskimo. He came paddling toward our ship in a double kyak and as our naphtha launch circled about him he had an amused childish look.

GILBERT'S PARTY SETTING OUT FOR COLUMBIA GLACIER.

CAMP ON HEATHER ISLAND NEAR COLUMBIA GLACIER.

We put a party ashore to spend a couple of days hunting and collecting. After the Sunday evening service, the sun was still glowing upon the distant white peaks, and a dozen or more of us seized the occasion to go ashore and walk in the long twilight upon the strange land. How novel and bewitching it all was! The open meadow-like



PHOTOGRAPH BY CURTIS

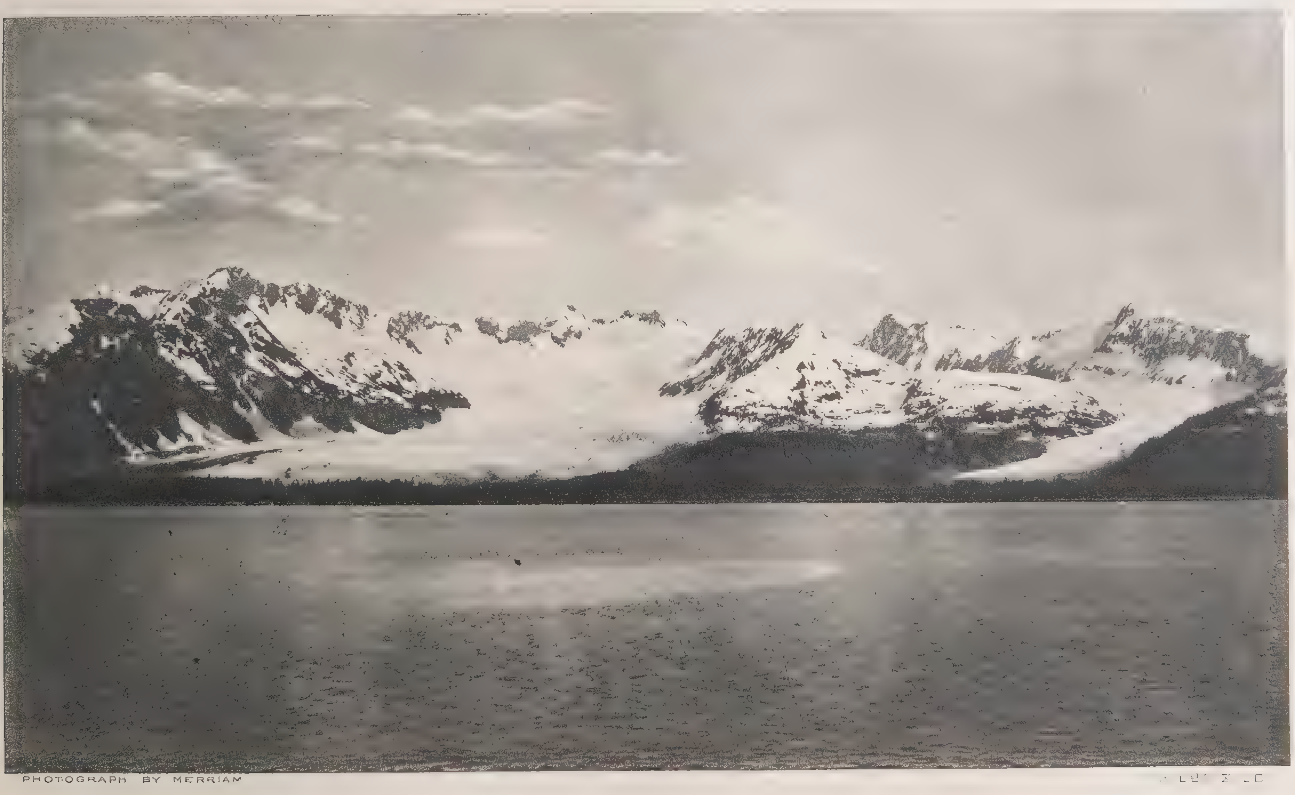
PART OF COLUMBIA GLACIER, PRINCE WILLIAM SOUND

expanse near the beach proved to be tundra — wet, spongy, mossy, grassy, and full of wild flowers, the most conspicuously beautiful of which was the shooting star or dodecathion. Our collectors had pitched their tents near the log cabin of two prospectors on a point of land at the mouth of a clear rapid stream. The hermit thrush sang in the forest close by; the stream sang, and the air under the shadow of the mountain was pervaded with a strange peace and charm. The only singing that was not so agreeable was that of the mosquitoes, but amid such scenes petty annoyances are soon forgotten. One of the prospectors, a brisk little man, whose clean snug cabin we visited, was born near North Cape in Norway. He had been here over a year, and as our ladies were the first who had ever visited his camp, he took off his hat, and with his hand upon his heart, made a gallant bow to them in acknowledgment. He was planning to go to the Paris Exposition next year, and life seemed to offer him many bright outlooks.

The next day, Monday the 26th, we spent in Port Wells, the extreme northeast arm of the sound, taking in water from a foaming mountain torrent and again coquetting with glaciers. The weather was fair, but the sea air was cold. Indeed, we were in another great ice chest — glaciers to right of us, glaciers to left of us, glaciers in front of us, volleyed and thundered; the mountains were ribbed with them, and the head of the bay was walled with them. At one time we could see five, separated by intervals of a few miles, cascading down from the heights, while the chief of the flock was booming at the head of the valley incessantly. The two large glaciers at the head of the fiord were named by our party Harvard and Yale; the cascading glaciers on the west side, Radcliffe, Smith, Bryn Mawr, Vassar, and Wellesley; and the main glacier on the east side of Port

Wells, Amherst. On going ashore we had a chance to view, in profile, those pouring down from the heights, and the effect was novel and strange. We looked along the green, tender enfoliaged side of the mountain and saw one of these torrents of shattered ice rising up fifty or more feet above its banks and as if about to topple over upon them; but it did not; to the eye it was as fixed as the rocks; apparently one could have leaned his back against the ice with his feet upon the foliage. The channel of Port Wells was so blocked with ice from the incessant discharges of the glaciers that the ship made her way with great difficulty and was finally compelled to anchor more than twenty miles from the head. In the launches we managed to get about ten miles nearer. Here was the most active glacier we had seen. The thundering of the great ice Niagara there in the distance was in our ears every moment; but we could not get near it; it beat us off with its ice avalanches. Such piles of gravel and broken rocks as I climbed and tried to cross that day at the foot of one of the lesser side glaciers dwarfed anything I had yet seen. They suggested the crush of mountains and the wreck of continents.

COLLEGE FIORD: BRYN MAWR GLACIER ON LEFT; HARVARD GLACIER IN DISTANCE.



PHOTOGRAPH BY MERRIAM [illegible]

AMHERST GLACIER CRESCENT GLACIER
COLLEGE FIORD, PRINCE WILLIAM SOUND

Two things constantly baffle and mislead the eye in all these Alaska waters — size and distance. Things are on a new scale. The standard one brings with him will not hold. The eye says it is three miles to such a point and it turns out six; or that the front of yonder glacier is a hundred feet high and it is two hundred or more. For my part I never succeeded in bringing my eye up to the Alaska scale. Many a point, many a height, which I marked for my own, from the deck of the ship, seemed to recede from me when I turned my steps toward it. The wonderfully clear air probably had something to do with the illusion. Forms were so distinct that one fancied them near at hand when they were not.

On shore we found gulls and Arctic terns nesting on little sandy hillocks, and saw oyster-catchers, a ptarmigan, and the wandering tattler. In the water the marbled murrelets were common; with their short wings and plump round bodies they looked like sea quail. Our first and only mishap to the ship in these waters befell us here — the breaking of one of the blades of the propeller upon a cake of ice, which had the effect of making our craft limp a little.

HARRIMAN FIORD.

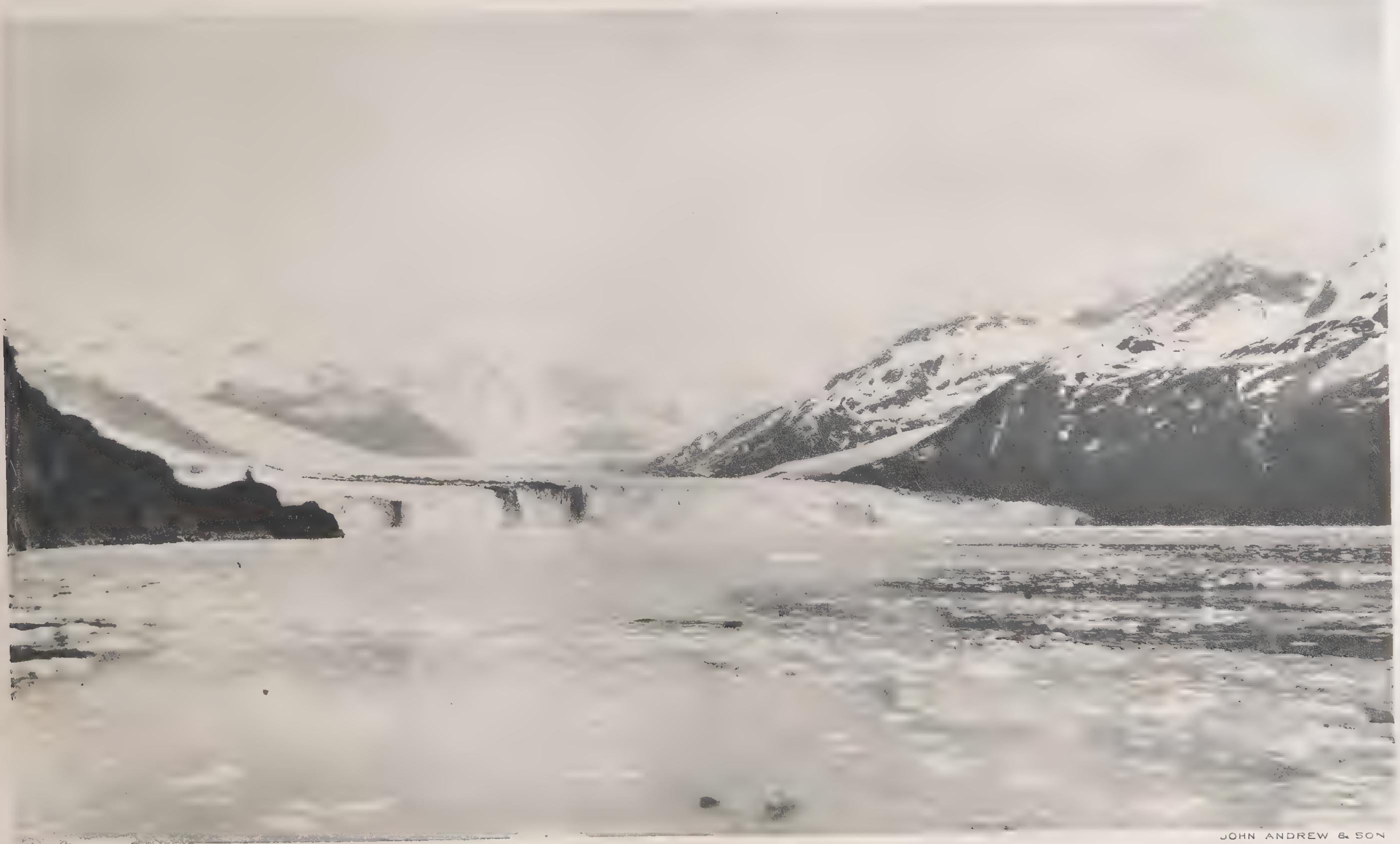
Later in the afternoon we ascended an arm of Port Wells more to the westward and entered upon a voyage of discovery. We steamed up to a glacier of prodigious size that reared its front across the head of the inlet and barred further progress in that direction — the Barry Glacier. According to the U. S. Coast Survey map we were at the end of navigation in these waters, but Mr. Harriman suggested to the Captain that he take the ship a little nearer the glacier, when a way seemed open to the left. As we progressed the mountains fell apart and a passage opened there around the corner, like a street coming in at right angles to a main thoroughfare.

The Captain naturally hesitated to enter it; it was unmapped and unsounded water.

"Go ahead, Captain," said Mr. Harriman, "I will take the risk."

BARRY GLACIER FROM A DISTANCE.
(ENTRANCE TO HARRIMAN FIORD AROUND THE POINT ON THE LEFT.)

We went on under a good head of steam down this new inlet where no ship had ever before passed. It was one of the most exciting moments of our voyage. We could see another huge glacier about ten miles ahead of us with its front on the water barring the way. Glaciers hung on the steep mountain sides all about us. Some of them, as Mr. Elliot said, looked like the stretched skins of huge polar bears. The scene was wild and rugged in the extreme. One of the glaciers was self-named the Serpentine by reason of its winding course down from its hidden sources in the mountains — a great white serpent with its jaws set with glittering fangs at the sea. Another was self-named the Stairway, as it came down in regular terraces or benches. A Colossus of Rhodes with seven-league boots would have been an appropriate figure upon it. As we neared the front of this last glacier the mountains to the left again parted and opened up another new arm of the sea, with more glaciers tumbling in mute sublimity from the heights, or rearing colossal palisades across our front. Another ten-mile course brought us to the head of this inlet, which was indeed the end of navi-



PHOTOGRAPH BY CURTIS

HARVARD GLACIER.

JOHN ANDREW & SON

gation in this direction. Here we left Gannett and Muir to survey and bring to map our new bit of geography. Subsequently this inlet was fitly named Harriman Fiord, and the glacier at the head of it, Harriman Glacier.

SERPENTINE GLACIER.

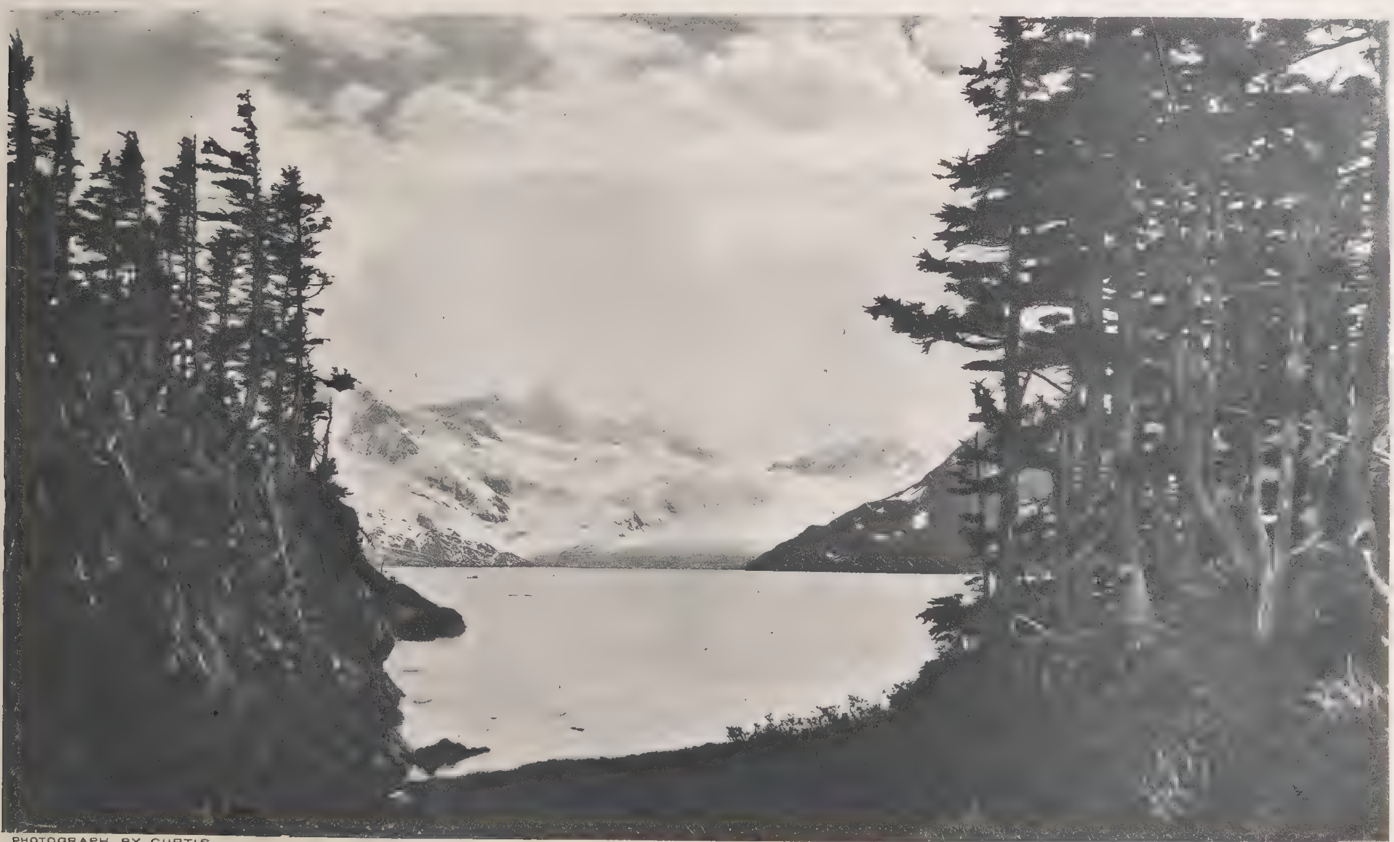
The various ice sheets united in one body, in no very distant past, which filled the inlet to the mountain's brim—a vast ice monster. Now the body of the monster is gone and his limbs lie upon the mountains on either side, while his tail and rump are at the head of the main valley.

On coming out of the inlet and turning almost at right angles into Port Wells, the tide which was with us and which was running very strong, caught our vessel and for a moment held her in its grasp. She hesitated to respond to her helm, and was making direct for the face of the great glacier on our port side; but presently she came about, as if aware of her danger, and went on her way in less agitated waters.

BARRY GLACIER, SHOWING ICE CAVES.

This great glacier — the Barry — which guards the entrance to Harriman Inlet, presented some novel features; among others, huge archways above the water line, suggesting entrances to some walled city. When masses of ice fell I fancied I could hear the reverberation in these arched caverns.

The next day, which was thick and rainy, we picked up our party at Virgin Bay, and steamed back to Orca to mend our broken propeller. I wondered how they would do it, as there is no dry dock there, but the problem proved an easy one. The tide is so great in these waters that every shelving beach becomes a dry dock at low tide. In the morning our steamer lay in shallow water on the beach at Orca. A low scaffolding was built around her propeller, and very soon the broken blade was replaced by a new one. While this was being done many of us viewed the process of salmon canning. Some of the fish lay piled upon the dock and were being loaded into wheelbarrows with a one-tined pitchfork, and wheeled in to the cleaners. Most of the work was done by Chinamen from San Francisco. It was positively fascinating to see the skill and swiftness with which some of these men worked; only two used knives — long thin blades which they kept very sharp. They cut off the fins, severed the head and tail, and did the disemboweling with lightning-like rapidity. It was like the tricks of jugglers. There was a gleam of steel about the fish a half moment and the work was done. One had to be very intent to follow the movements. The fish were then washed and scraped and passed on to workmen inside, where they were cut and packed by machinery. Every second all day long a pound can, snugly packed, drops from the ingenious mechanism. For some reason the looker-on soon loses his taste for salmon — there is such a world of it. It is common as chips; it is kicked about under foot; it lies in great



PHOTOGRAPH BY CURTIS

JOHN ANDREW & SON

THE HARRIMAN GLACIER.

sweltering heaps; many of the fish are pecked and bruised by gulls and ravens while lying upon the beach before they are brought in; the air is redolent of an odor far different from that of roses or new-mown hay, and very soon one turns away to the woods or to the unpolluted beach.

The first tide was not high enough to lift our steamer, so we passed another day at Orca, and all hands went in the naphtha launches on a picnic to a wild place eight or ten miles distant with the suggestive name of Bomb Point. It was a lovely secluded spot, a crescent-shaped beach half a mile long at the head of a shallow bay, flanked by low wooded points and looked down upon by lofty mountains. Here we were quickly roaming over one of those large natural clearings or hyperborean meadows which we had so often seen from the ship and which had looked so friendly and enticing. This one, on a nearer view, proved especially alluring and delightful — a strange air of privacy and seclusion was over it all. It was not merely carpeted to the foot, it was cushioned. Walking over it was like walking over a feather bed — moss and grass a foot deep or more upon a foundation of soft peat. Wild flowers — yellow, white, pink, purple — were everywhere.

Little pools or basins of brown water, their brims neatly faced and rounded with moss and grass were sunk here and there into the surface. Stunted mossy hemlocks and spruces dotted the landscape, and the near-by woods threw out irregular lines of gray moss-draped trees — novel, interesting. Such a look of age, and yet the bloom and dimples of youth! Bearded, decrepit, dwarfed spruces, above a turf like a pillow decked with flowers! I walked along a margin of open woods that had a singularly genial, sheltered, home look, and listened to the dwarf hermit. The nearer we get to the region of perpetual snow, the more does vegetable life seem to simulate snow and cover the ground with softness — softness to the foot, and dimpled surface to the eye. Such handfuls of wild flowers as we all gathered! The thought in everyone's mind was, Oh, if we could only place these flowers in the hands of friends at home! The colors were all deep and intense.

In the afternoon the steamer picked us up. A little after midnight we took aboard the party we had left at Columbia Glacier, and then returned to Harriman Fiord for Gannett and Muir. When they were on board we once more turned our faces to the open sea, bound for Cook Inlet, the largest of the Alaska bays. It penetrates the land 150 miles and is more than fifty miles broad at its mouth.

We entered it on the 30th, under bright skies, and dropped anchor behind a low sandspit in Kachemac Bay, on the end of which is a group of four or five buildings making up the hamlet of Homer. There was nothing Homeric in the look of the place, but grandeur looked down upon it from the mountains around, especially from the great volcanic peaks, Iliamna and Redoubt, sixty miles across the inlet to the west. The former rises over 12,000 feet from the sea and, bathed in sunshine, was an impressive spectacle. It was wrapped in a mantle of snow, but it evidently was warm at heart, for we could see steam issuing from two points near its summit.

HOMER, KACHEMAC BAY.

Our stay in Cook Inlet was brief. Our hunters had hoped to kill some big game here, but after interviewing

Painting By R. Swain Gifford.

The Grignard Litho. Co, N.Y.

Volcano of Iliamna, Cook Inlet.
Altitude 12066 Ft.

an experienced hunter who had a camp on shore, they concluded that on our return in July the prospects would be better. On the afternoon of June 30th, therefore, we left the inlet and were off for the island of Kadiak, a hundred miles to the southwest.

KADIAK.

We were now about to turn over a new leaf, or indeed to open a new book, and to enter upon an entirely different type of scenery — the treeless type. Up to this point, or for nearly 2,000 miles, we had seen the mountains and valleys covered with unbroken spruce forests. Now we were to have 2,000 miles without a tree, the valleys and mountains green as a lawn, and to the eye as smooth; all of volcanic origin; many of the cones ideally perfect; the valleys deepened and carved by the old glaciers, and heights and lowlands alike covered with a carpet of grass, ferns, and flowers.

The forests begin to fail at the mouth of Cook Inlet. As we came out my eye was drawn to rolling heights where were groups and lines of trees amid broad green expanses. The suggestion of hill farms at home with orchards and groves, and trees along the fences, was very strong, but one looked in vain for the houses and barns of the farmers. We were going into a milder climate too. During nearly all the month of June, despite our extra winter clothing, I had suffered with cold. In Prince William Sound and in Yakutat Bay we were in vast refrigerating chests. The air had all been on ice, and the sunshine seemed only to make us feel its tooth the more keenly. With benumbed fingers I wrote to a friend in this strain: "Amid your summer weather do remember us in our wanderings, a-chill on these northern seas, beleagured by icebergs, frowned upon by glaciers, and held as by some enchantment in a vast circle of snow-capped mountain peaks. Are your hands and feet really warm? Is it true that there is no snow upon the mountains?"

But balmier skies awaited us; the warmer currents of the Pacific flowing up from Japan and the southern seas were soon to breathe upon us; that pastoral paradise Kadiak was soon to greet us.

All the afternoon we steamed along the coast in smooth seas, in full view of lofty snow-covered mountains with huge glaciers issuing from out their loins. Late at night, off against Kukak Bay, we put off a party of five or six men who wished to spend a week collecting and botanizing on the mainland. It looked like a perilous piece of business, the debarkation of these men in the darkness, in an open boat on an unknown coast many miles from shore. Might they not miss the bay? Might they not find the surf running too high to land, or might not some other mishap befall them? But after a hard pull of several hours, they made the shore in a suitable landing place and their days spent there were in every way satisfactory.

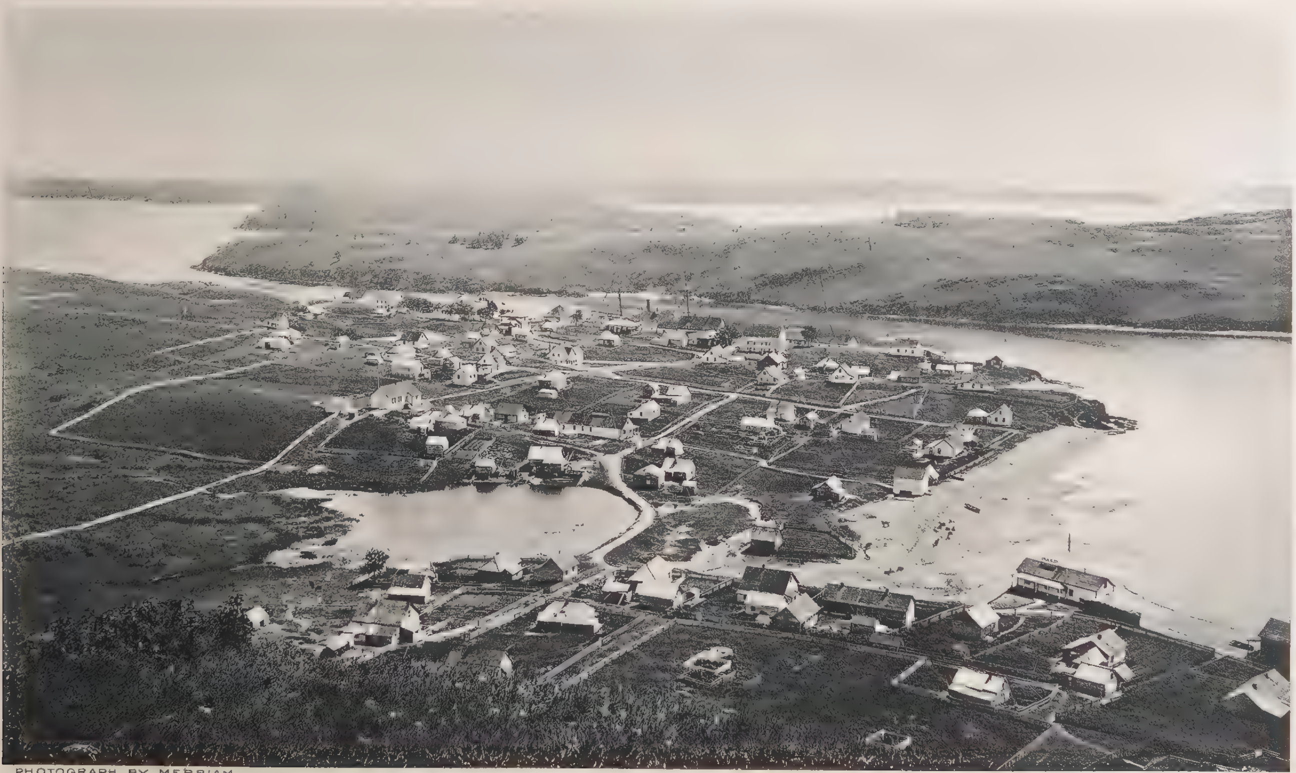
UYAK BAY, KADIAK ISLAND.

On the morning of July 1st, we woke up in Uyak Bay on the north side of the Island of Kadiak. The sky was clear and the prospect most inviting. Smooth treeless green hills and mountains surrounded us, pleasing to the eye and alluring to the feet. Two large salmon canneries were visible on shore, and presently a boat came off to us with fresh salmon. Here we left a naphtha launch with a party of six men, heavily armed, bent on finding and killing the great Kadiak bear — the largest species of bear in the world, as big as an ox. They had been making up their mouths for this monster bear all the way, and now they were at last close to his haunts. In two or three days we were to return and pick them up and hoist their game aboard with the great derrick. In the delicious sunshine we steamed out of Uyak bound for Kadiak village on the east end of the island, 100 miles away. Kadiak Island lies nearly south from Cook Inlet, about fifty miles from the mainland. It is 150 miles long and one-third as broad. It would just about fill up Cook Inlet, out of which it may have slipped some time for aught I know. It is treeless except upon the east end, which faces toward the great Alaska forests from which the tree infection may have come.

How beautiful and interesting the shores we passed that day; smooth rounded hills as green and tender to the eye as well kept lawns, recalling the hills we saw in May upon the Snake River — natural sheep ranges such as one sees in the north of England, but not a sign of life upon them.

I warn my reader here, that henceforth I shall babble continually of green fields. There was no end to them. We had come from an arboreal wilderness to a grassy wilderness, from a world of spruce forests to a world of emerald heights and verdant slopes. Look at the map of Alaska and think of all the peninsulas from Cook Inlet and all the adjacent islands, and the long chain of the Aleutians sweeping nearly across to Asia, as being covered with an unbroken carpet of verdure — it must needs be the main feature in my descriptions. Never had I seen such beauty of greenness, because never before had I seen it from such a vantage ground of blue sea. We had not been many hours out of Uyak that afternoon when we began to see a few scattered spruce trees, then patches of forest in the valley bottoms. At one point we passed near a large natural park. It looked as if a landscape gardener might have been employed to grade and shape the ground and plant it with grass and trees in just the right proportion. Here were cattle too, and how good they looked, grazing or reposing on those smooth long vistas between the trees. To eyes sated with the wild austere grandeur of Prince William Sound the change was most delightful. Our course lay through narrow channels and over open bays sprinkled with green islands, past bold cliffs and headlands, till at three o'clock we entered the narrow strait, no more than twice the ship's length in width, upon which is situated the village of Kadiak, called by the Russians St. Paul. We could see the wild flowers upon the shore as we passed along, barn swallows twittered by, a magpie crossed the strait from one green bank to another, and as we touched the wharf a song sparrow was singing from the weather vane of a large warehouse — a song sparrow in voice, manners, and color, but in form twice as large as our home bird. The type of song sparrow changes all the way from Yakutat Bay to the Aleutian Islands, till at the latter place it is nearly as large as the catbird; but the song and general habits of the bird change but very little. How welcome the warmth too! We had

BOLD HEADLAND NEAR KADIAK.



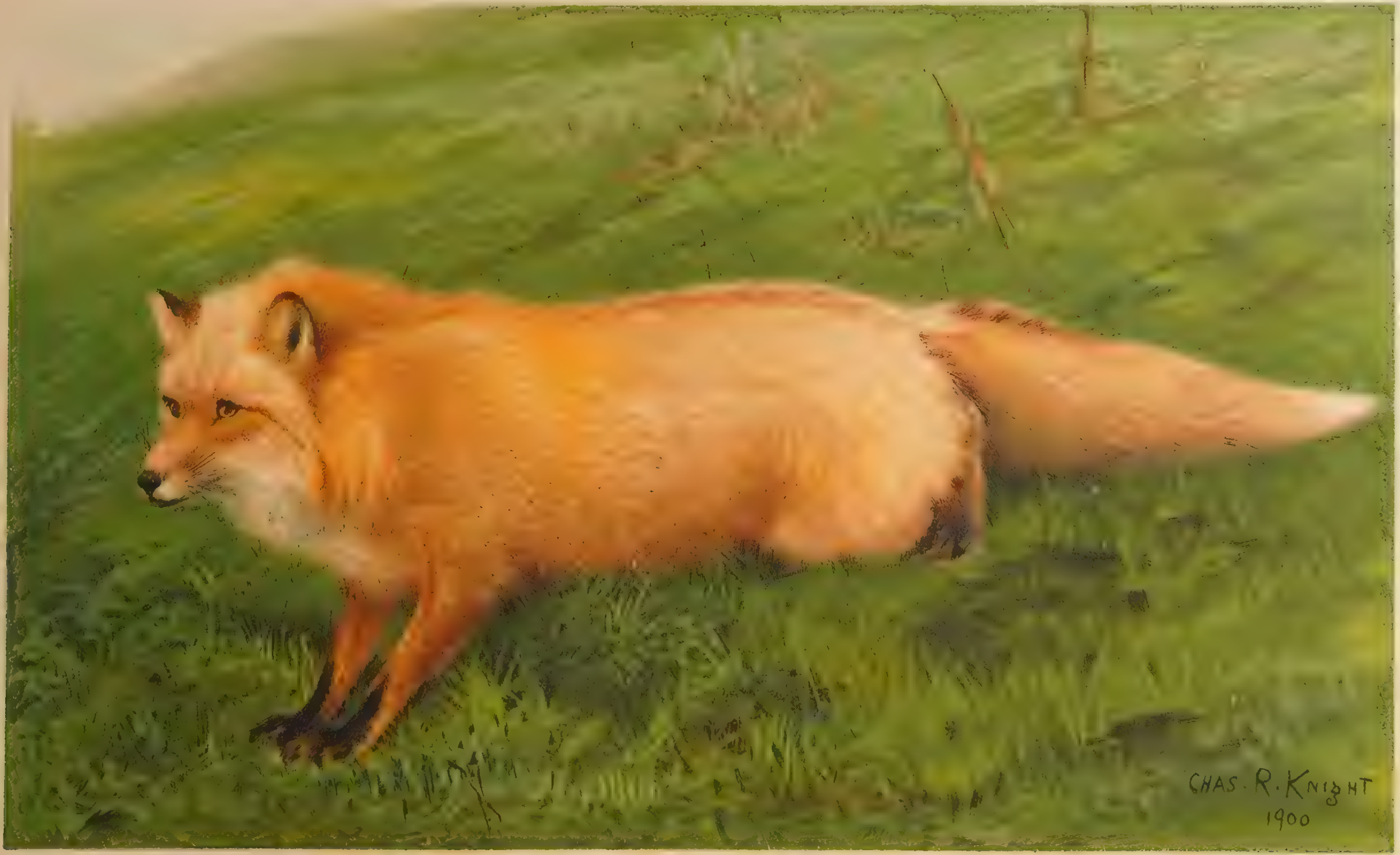
PHOTOGRAPH BY MERRIAM

VILLAGE OF KADIAK, ALASKA

stepped from April into June, with the mercury near the seventies, and our spirits rose accordingly. How we swarmed out of the ship, like boys out of school, longing for a taste of grass and of the rural seclusion and sweetness! That great green orb or half orb of a mountain that shone down upon us from just back of the town, the highest point in its rim at an altitude of 2,300 feet — how our legs tingled to climb it! and the green vale below, where the birds were singing and many rare wild flowers blooming; and the broad, gentle height to the north, threaded by a grassy lane, where groves of low fragrant spruces promised a taste of the blended sylvan and pastoral; or the smooth rounded island opposite over which the sea threw blue glances; or the curving line of water sweeping away to the south toward a rugged mountain wall, streaked with snow; or the peaceful, quaint old village itself, strung upon paths and grassy lanes, with its chickens and geese and children, and two or three cows cropping the grass or ruminating by the wayside — surely here was a tempting field to ship-bound voyagers from the chilly and savage north. The town itself had a population of seven or eight hundred people, Indians, half breeds, and Russians with a sprinkling of Americans, living in comfortable frame cottages, generally with a bit of garden attached. The people fish, hunt the sea-otter, and work for the Alaska Commercial Company. We met here an old Vermonter, a refined, scholarly looking man, with a patriarchal beard, who had married a native woman and had a family of young children growing up around him. He liked the climate better than that of New England. The winters were not very cold, never below zero, and the summers were not hot, rarely up to 80°. There were no horses or wheeled vehicles in town, and the streets were grassy lanes. Such a rural Arcadian air I had never before seen pervading a town upon American soil. There is a Greek church near the wharf and its chime of bells was in our ears for hours at a time. The only incongruous thing I saw was a building with a big sign on its ridge board: 'Chicago Store.' I went in and asked for some fresh eggs; they did not have any, but directed me to a cottage near the beach.

GREEK CHURCH AT KADIAK.

I found here a large Russian woman who had the eggs, for which, after consulting with a younger women, she wanted 'four bits.' The potatoes in her garden had tops a foot high, and her currant bushes were just in bloom. Our stay of five days in this charming place was a dream of rural beauty and repose: warm summer skies above us, green flower-strewn hills and slopes around us, our paths were indeed in green pastures and beside still waters. One enticing path left the old Russian road half a mile north of the village, and led off northwest across little mossy and flowery glens, through spruce groves, over little runs, up a shoulder of the mountain, and then down a couple of miles into a broad green silent valley which held a fine trout-brook. The path was probably made by the village anglers. In looking into such a peaceful verdant sweep of country, one almost instinctively looked for the farmhouses or for flocks and herds and other signs of human occupancy; but they were not there. One high mountain that cut into the valley at right angles had a long easy ridge, apparently as sharp as the ridge board of a building. I marked it for my own and thought to set my feet upon it, but the way was too beguiling and I never reached it.



PAINTING BY CHARLES R KNIGHT

KADIAK FOX VULPES HARRIMANI Merriam

It looked as if it had just had a priming coat of delicate green paint.

But the mighty emerald billow that rose from the rear of the village — we all climbed that, some of us repeatedly. From the ship it looked as smooth as a meadow, but the climber soon found himself knee deep in ferns, grasses, and a score of flowering plants, and now and then pushing through a patch of alders as high as his head. He could not go far before his hands would be full of flowers, blue predominating. The wild geranium here is light blue, and it tinged the slopes as daisies and buttercups do at home. Near the summit were patches of a most exquisite forget-me-not of a pure delicate blue with yellow center. It grew to the height of a foot, and a handful of it looked like something just caught out of the sky above. Here too, was a small delicate lady's slipper, pale yellow striped with maroon. Here also was a dwarf rhododendron, its large purple flowers sitting upon the moss and lichen. The climber also waded through patches of lupine, and put his feet upon bluebells, Jacob's ladder, iris, saxifrage, cassiope, and many others. The song birds that attracted our notice were the golden-crowned sparrow and the little hermit thrush. The golden-crown had a peculiarly piercing plaintive song, very simple, but very appealing. There were only three notes, but they were from out the depths of the bird's soul. In them was all the burden of the mystery and pathos of life.

In the spruce groves to the north opened up by the old grassy road, beside the birds named, one heard the pine grosbeak, the gray-cheeked thrush, and the weird strain of the Oregon robin. This last bird was very shy and hard to get view of. I reclined for two hours one day upon the deep dry moss under the spruces, waiting for the singer to reveal himself. When seen he looks like our robin in a holiday suit. His song is a long, tapering note or whistle, at times with a peculiar tolling effect.

TO THE OREGON ROBIN IN ALASKA.

O Varied thrush! O Robin strange!
Behold my mute surprise.
Thy form and flight I long have known,
But not this new disguise.

I do not know thy slaty coat,
Nor vest with darker zone;
I'm puzzled by thy recluse ways
And song in monotone.

I left thee 'mid my orchard's bloom,
When May had crowned the year;
Thy nest was on the apple bough,
Where rose thy carol clear.

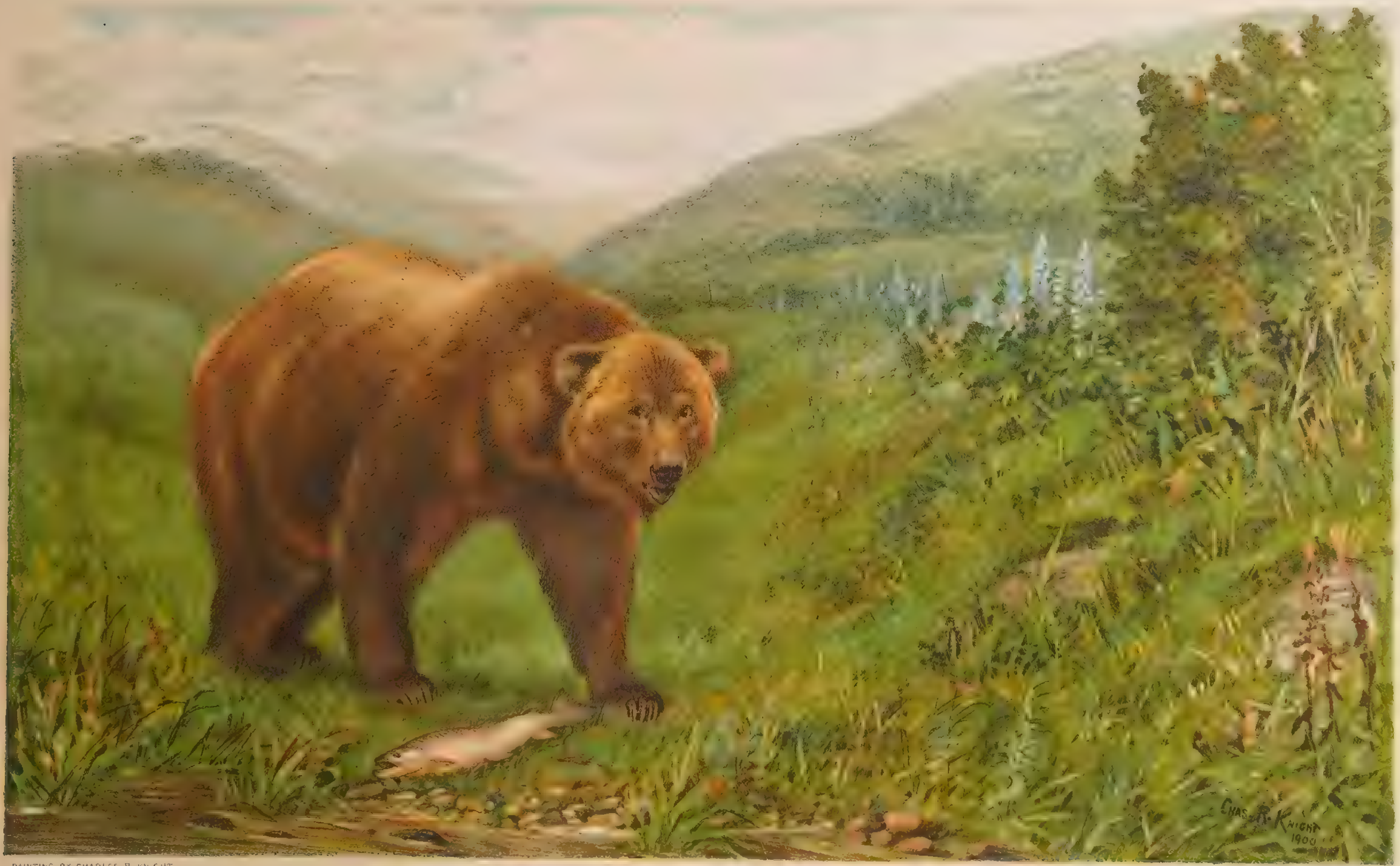
Thou lurest now through fragrant shades,
Where hoary spruces grow;
Where floor of moss infolds the foot,
Like depths of fallen snow.

Loquacious ravens clack and croak
Nor hold me in my quest;
The purple grosbeaks perch and sing
Upon the cedar's crest.

But thou art doomed to shun the day,
A captive of the shade;
I only catch thy stealthy flight
Athwart the forest glade.

Thy voice is like a hermit's reed
That solitude beguiles;
Again 'tis like a silver bell
Adrift in forest aisles.

Throw off, throw off this masquerade
And don thy ruddy vest,
And let me find thee, as of old,
Beside thy orchard nest.



PAINTING BY CHARLES R. KNIGHT.

KADIAK BEAR (URSUS MIDDENDORFFI Merriam)

Kadiak Island, Alaska

While here Mr. Harriman had the luck to kill the long expected Kadiak bear; he shot a mother and cub. He and his guide, an old Russian named Stepan Kondakoff, found her grazing in true bovine fashion near the snow line on the mountain side about ten miles to the south. She was eating grass like a cow, Mr. Harriman said. She was a large animal, but below the size of the traditional Kadiak bear. Her color was a faded brown. A much larger one was seen far across a difficult valley.

CONE MOUNTAIN, NEAR BEAR CAMP, KADIAK ISLAND.

On July 3d, which was bright and warm, a number of us visited Wood Island, a few miles to the east, where the North American Commercial Company has its headquarters, and where are large old spruce woods and lakes of fresh water. Charles Keeler and I heard, or fancied we heard voices calling us from out of the depths of the woods; so we left the party and took ourselves thither and lounged for hours in the mossy fragrant solitudes, eating our lunch by a little rill of cold water, listening to the birds and ravens, and noting the wood flowers and moss-draped trees. Here we heard the winter wren at our leisure, a bubbling, trilling, prolonged strain like that of our own species, but falling far short of it in melody and in wild lyrical penetration. In other words it was the same song sung by a far inferior voice. The elusive note of the Oregon robin, as if the dark motionless spruces had found a voice, was also heard here and there. These woods were not merely carpeted with moss, they were upholstered; the ground was padded ankle deep, and under every tree was a couch of the most luxuriant kind.

The 4th of July found us, as it usually finds Americans, wherever they are, full of patriotism and overflowing with bunting and gunpowder hilarity. Our huge graphophone played very well the part of a brass band; Professor Brewer, upon the hurricane deck, discharged admirably the duties of the orator of the day, followed by Mr. Keeler, who shaded the picture the speaker had drawn by a stirring poem, touching upon some of the nation's shortcomings; songs and music, followed by a boat race and general merriment, finished the program.

Kadiak I think won a place in the hearts of all of us. Our spirits probably touched the highest point here. If we had other days that were epic, these days were lyric. To me they were certainly more exquisite and thrilling than any before or after. I feel as if I wanted to go back to Kadiak, almost as if I could return there to live — so secluded, so remote, so peaceful; such a mingling of the domestic, the pastoral, the sylvan, with the wild and the rugged; such emerald heights, such flowery vales, such blue arms and recesses of the sea, and such a vast green solitude stretching away to the west, and to the north and to the south — bewitching Kadiak! the spell of thy summer freshness and placidity is still upon me.

On the 5th, still under clear warm skies, we left this rural paradise and steamed away to Kukak Bay on the mainland to pick up the party we left there on the night of the 30th. It was a relief to find they had had no misadventure and were well pleased with their expedition. They described one view that made the listener wish he had been with them: they had climbed to the top of a long green slope back of their camp and had suddenly found themselves on the brink of an almost perpendicular mountain wall with a deep notch, through which they had looked down 2,000 feet into a valley beneath them invaded by a great glacier that swept down from the snow-white peaks beyond. The spectacle was so unexpected and so tremendous that it fairly took their breaths away. From the deck of the ship the slope up which their course lay looked like a piece of stretched green baize cloth.

An event of this day's cruising which I must not forget was the strange effects wrought for us by that magician *Mirage:* islands and headlands in the air, long low capes doubled, one above another, with a lucid space between them; a level snowy range standing up slightly above a nearer rocky one, drawn out and manipulated till it suggested a vast Grecian temple crowning a rocky escarpment — fantasy, illusion, enchantment-trick played with sea and shore on every hand that afternoon.

From this point we turned to the island again and in the middle of the night gathered in the bear hunters we had left at Uyak Bay. They were bearless, but they had the comfort of having seen many signs of bears, and of having had many enjoyable tramps over hill and across dale in a green treeless country, of having found a superb waterfall, and of having survived the hordes of mosquitoes.

We steamed all day southwestward along the Alaska Peninsula, under clear skies and over smooth waters, past the Semides and bound for the Shumagin Islands, where we dropped anchor about midnight.

When we put our heads out of our windows on the morning of the 7th we were at anchor off Sand Point, a bay in Popof Island, one of the Shumagin group, about half way down the Alaska Peninsula. On the one hand we saw a low green treeless slope, almost within a stone's throw, from which came many musical bird voices — the lesser hermit thrush, the golden-crowned sparrow, the fox sparrow, the large song sparrow, the yellow warbler, the rosy finch — all were distinguishable from the ship's deck. It is a novel experience to wake up in the morning on an ocean steamer and hear bird songs through your open window. But this was often our experience on this trip. On this grassy hill were some curious volcanic warts or excrescences that gave a strange effect to the scene. On the other hand, the blue waters of the harbor stretched away to low alder-clad shores from which rose a range of bare volcanic mountains, among them one perfect cone, probably 3,000 feet high.

In the Shumagins three men elected to leave the ship to dredge the sea and study the volcanic formation of the land. We promised to pick them up on our return ten days hence. At 10 o'clock our anchor was up and we were off for Unalaska. The event of this day was the view we had of the twin volcanic peaks of Pavlof, rising from the shore to an altitude of 7,000 or 8,000 feet. One of them was a symmetrical cone with black converging lines of rock cutting through the snow like the ribs of an umbrella; the other was more rugged and irregular, with many rents upon its sides and near its summit, from which issued vapor, staining the snow like smoke from a chimney. Sheets of vapor were also seen issuing from cracks at its foot near the sea level. We were specially fortunate in seeing these grand mountains under such favorable weather conditions.

On this day also, just after passing Pavlof, we were for hours in sight of the Aghileen Pinnacles, which have such a strange architectural effect amid the wilder and ruder forms that surround them, as if some vast many-spired cathedral of dark gray stone were going to decay there in the mountain solitude. Both in form and color they seemed alien to everything about them. Now we saw them athwart the crests of smooth green hills, then rising behind naked rocky ridges, or fretting the sky above

Painted by Gifford

[illegible] From Shumagin Islands

lines of snow. Their walls were so steep that no snow lay upon them, while the pinnacles were like church spires.

The whole of the Alaska Peninsula, and all the islands off it, and the islands in Bering Sea and the Aleutian group, are of volcanic origin, and some of the embers of the old fires are still alive in our day, as we had proof. Since our visit there has been other proof in the shape of a severe earthquake shock felt all along the Alaska coast, in some places disastrously.

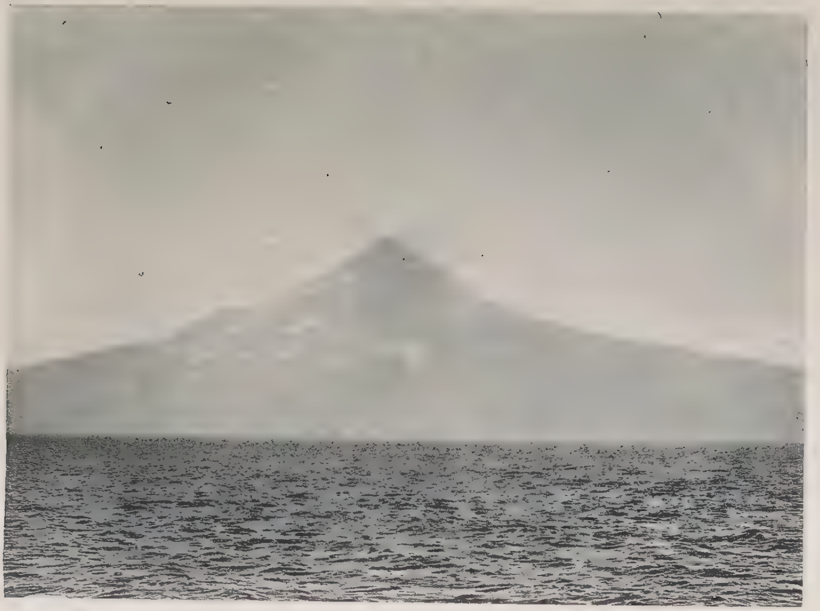
Continuing to the westward we sailed along verdant shores and mountains without sign of human habitation till we saw a cluster of buildings called Belkofski — two or three dozen brown roofs grouped around a large white, green-topped building, probably a Greek church. The settlement seemed carefully set down there in the green solitude like a toy village on a shelf. The turf had not been anywhere broken; not a mark or stain upon the treeless landscape. Above it ran a high smooth barren mountain which swept down in green slopes to a broad emerald plain upon which the hamlet sat. Now a long headland comes down to the water's edge with its green carpet; then again it is cut off sharply by the sea, or cut in twain, showing sheer pyramidal walls 200 feet high. Then a succession of vast, smooth emerald slopes running up into high gray barren mountains, pointed, conical, curved; now presenting a mighty bowl, fluted and scalloped and opening on one side through a sweep of valley to the sea, then a creased and wrinkled lawn at an angle of 45° and miles in extent. The motionless ice sheets we had seen farther north flowing down out of the mountains, were here simulated by grassy billows flowing down out of the hills. Green, white, and blue are the three prevailing tints all the way from Cook Inlet to Unalaska — blue of the sea and sky, green of the shores and lower slopes, and white of the lofty peaks and volcanic cones — they are mingled and contrasted all the way.

Was it on this day also that my eye dwelt so long and so fondly upon what appeared to be another architectural ruin, abutting on the sea and bathed in the soft light of the late afternoon sun? Was it some old abbey, or was it some unfinished temple to the gods of the mountain? Two spires, one at either end, stood up many hundred feet, one slender and tapering to a blunt point, with the suggestion of a recess for a bell, the other heavy and massive, and evidently only a stump of what it had been; the roof vast and sloping, the upper story with its windows rudely outlined, and the lower merged in a mass of gray uncarved rock.

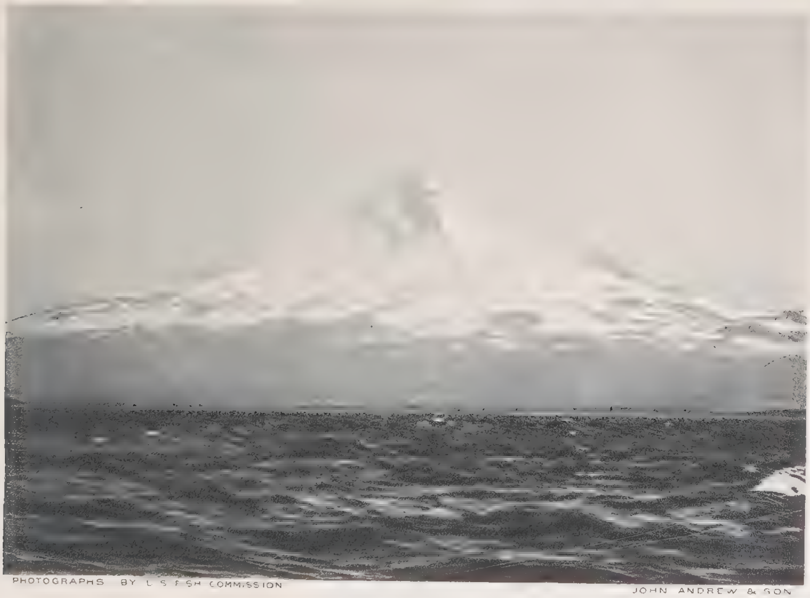
Before nightfall we passed two more notable volcanic peaks, Isanotski and Shishaldin, both of which penetrate the clouds at an altitude of nearly 9,000 feet. These are on Unimak Island at the end of the peninsula. Our first glimpse was of a black cone ending in a point far above a heavy mass of cloud. It seemed buoyed up there by the clouds. There was nothing visible beneath it to indicate the presence of a mountain. Then the clouds blotted it out; but presently the veil was brushed aside again, and before long we saw both mountains from base to summit and noted the vast concave lines of Shishaldin that swept down to the sea, and that mark the typical volcanic form.

The long graceful curves, so attractive to the eye, repeat on this far off island the profile of Fuji-Yama, the sacred peak of Japan. Those of our party who had seen Shishaldin in previous years described it as snow white from base to summit. But when we saw it the upper part, for several thousand feet, was dark — doubtless the result of heat, for it is smoking this year.

On the morning of the 8th we were tied up at the pier in Dutch Harbor, Unalaska, amid a world of green hills



Mt. Shishaldin from the South



PHOTOGRAPHS BY U.S. FISH COMMISSION

JOHN ANDREW & SON

Mt. Shishaldin from the North

and meadows like those at Kadiak. It was warm and cloudy with light rain. We tarried here half a day, taking in coal and water, visiting the old Russian town of Iliuliuk a couple of miles away at the head of another indentation in the harbor, strolling through the wild meadows, or climbing the emerald heights.

LONG MOUNTAIN NEAR UNALASKA.

GREEK CHURCH, UNALASKA.

One new bird, the Lapland longspur, which in color, flight, and song suggested our bobolink, attracted our attention here. As we came 'cross lots' over the flower besprinkled undulating plain from the old town to the new, this bird was in song all about us, hovering in the air, pouring out its liquid bubbling song, and dropping down in the grass again in a way very suggestive of the home bird — so much so that it may be fitly called the northland bobolink.

TO THE LAPLAND LONGSPUR.

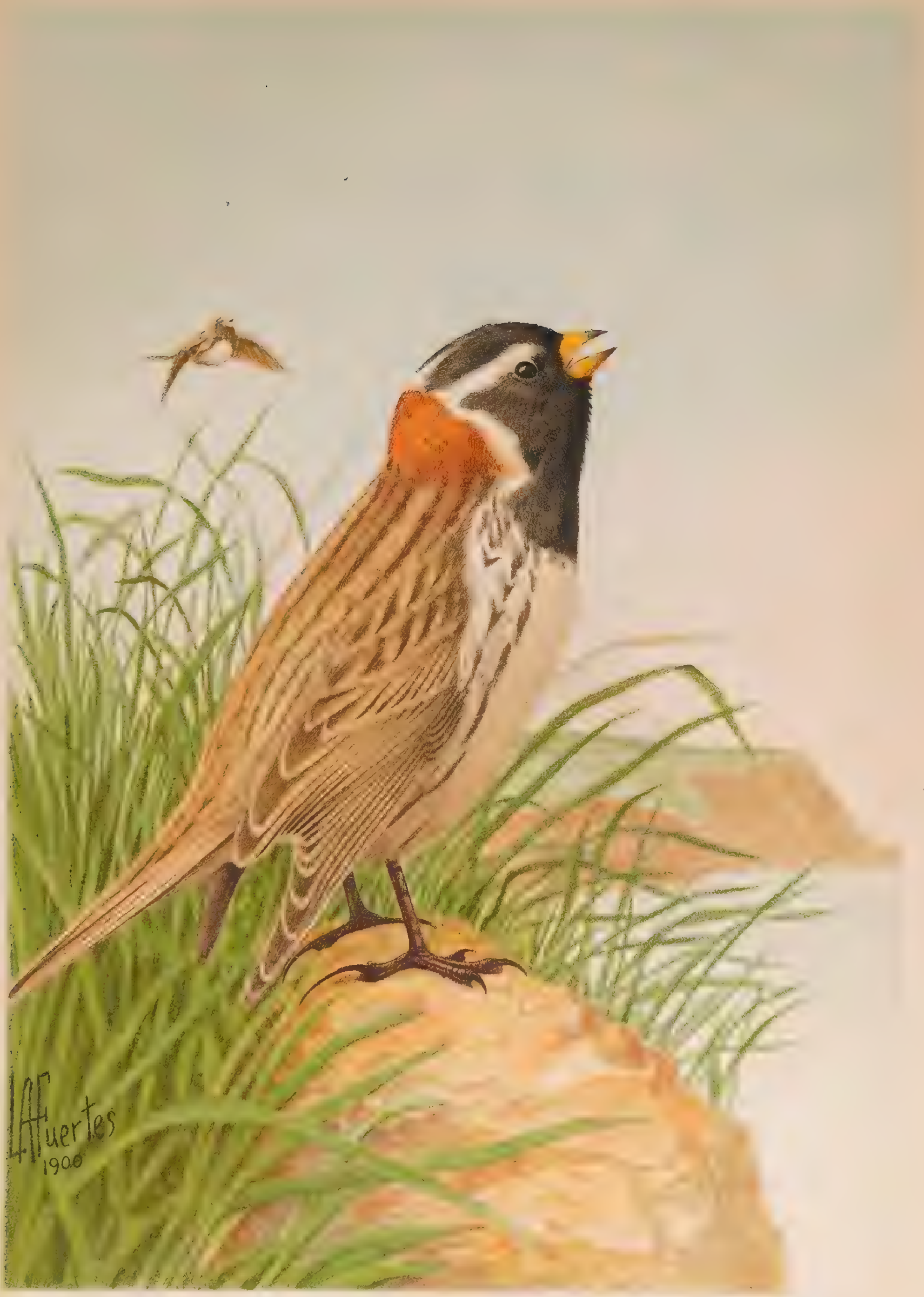
Oh! thou northland bobolink,
  Looking over summer's brink,
Up to winter, worn and dim,
  Peering down from mountain rim,
Peering out on Bering Sea,
  To higher lands where he may flee—
Something takes me in thy note,
  Quivering wing and bubbling throat,

Something moves me in thy ways—
  Bird, rejoicing in thy days,
In thy upward hovering flight,
  In thy suit of black and white,
Chestnut cape and circled crown,
  In thy mate of speckled brown;
Surely I may pause and think
  Of my boyhood's bobolink.

Soaring over meadows wild—
  (Greener pastures never smiled)
Raining music from above—
  Full of rapture, full of love;
Frolic, gay and debonaire,
  Yet not all exempt from care,
For thy nest is in the grass,
  And thou worriest as I pass;
But nor hand nor foot of mine
  Shall do harm to thee or thine;
I, musing only, pause to think
  Of my boyhood's bobolink.

But no bobolink of mine
  Ever sang o'er mead so fine—
Starred with flowers of every hue,
  Gold and purple, white and blue,
Painted cup, anemone,
  Jacob's ladder, fleur de lis,
Orchid, harebell, shooting star,
  Crane's bill, lupine, seen afar,
Primrose, rubus, saxifrage,
  Pictured type on Nature's page—
These and more, here unnamed,
  In northland gardens, yet untamed,
Deck the fields where thou dost sing,
  Mounting up on trembling wing;
Yet in wistful mood I think
  Of my boyhood's bobolink.

On Unalaska's emerald lea,
  On lonely isles in Bering Sea,



A. HOEN & CO. BALTIMORE

Alaska Longspur, Calcarius lapponicus alascensis

Unalaska, July 8, 1899

On far Siberia's barren shore,
  On north Alaska's tundra floor;
At morn, at noon, in pallid night,
  We heard thy song and saw thy flight,
While I, sighing, could but think
  Of my boyhood's bobolink.

UNALASKA, July 18, 1899.

On the higher peaks, amid lingering snow banks, Mr. Ridgway found the snow bunting and the titlark nesting. Unalaska looked quite as interesting as Kadiak, and I longed to spend some days here in the privacy of its green solitudes, following its limpid torrent streams, climbing its lofty peaks, and listening to the music of the longspur. I had seen much but had been intimate with little; now if I could only have a few days of that kind of intimacy with this new nature, which the saunterer, the camper-out, the stroller through fields in the summer twilight has, I should be more content; but in the afternoon the ship was off into Bering Sea headed for the Seal Islands, and I was aboard her, with wistful and reverted eyes.

The first hour or two out from Dutch Harbor we sailed past high rolling green hills, cut squarely off by the sea, presenting cliffs seven or eight hundred feet high of soft reddish crumbling rock, a kind of clay porphyry of volcanic origin, touched here and there on the face with the tenderest green. It was as if some green fluid had been poured upon the tops of the hills and had run down and dripped off the rock eaves and been caught upon every shelf and projection. The color was deepest in all the wrinkles and folds of the slopes and in the valley bottoms. At one point we looked into a deep smooth valley or trough opening upon the sea, its shore line a complete half circle. Its bottom was nearly at the water level and was as fresh and vivid as a lawn in spring. Some one suggested that it looked like a huge dry-dock, if dry-docks are ever carpeted with grass. The effect was extremely strange and beautiful. The clouds rested low across the hills and formed a dense canopy over the vast verdant cradle; under this canopy we looked along a soft green vista for miles back into the hills where patches of snow were visible. At another point a similar trough or cradle had been carved down to within a hundred or more feet of the sea, and upon its rocky face hung a beautiful waterfall. Then followed other lesser valleys that did not show the same glacial cross section; they were V-shaped instead of U-shaped, each marked by a waterfall into the sea. There were three of these in succession cutting the rocky sea front into pyramidal forms. Often the talus at the foot of the cliffs was touched by the same magic green. Then opened up larger valleys into which we looked under a rolled up drop-curtain of cloud. One of them was lighted up by the sun and we saw an irregularly carved valley landscape, suggesting endless possibilities of flocks and herds and rural houses. Here again the green fluid seemed to have found its way down the creases and runnels and was deepest there. Everywhere such a sweep of green skirts as these Alaska hills and mountains present, often trailing to the sea! I never tired of them, and if I dwell upon them unduly long, let the reader remember that a thousand miles of this kind of scenery, passing slowly before one on a succession of summer days, make an impression not easily thrown off.

THE SEAL ISLANDS.

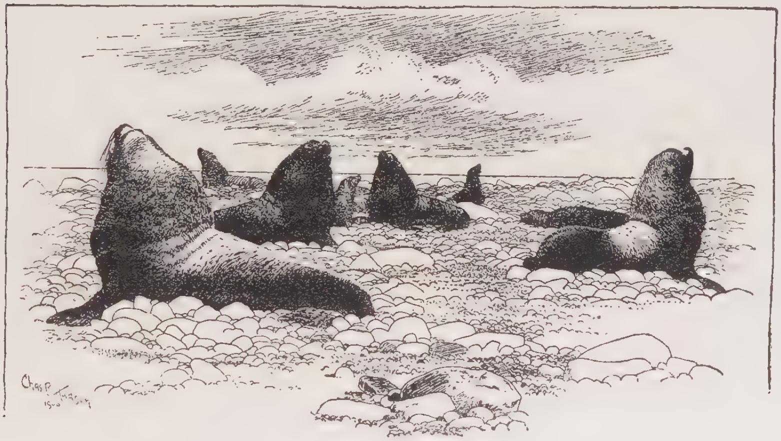
Before many hours we ran into lowering misty weather in Bering Sea, and about 7 o'clock were off the Bogoslof Islands, two abrupt volcanic mounds, one of them thrown up in recent years, the other the breeding ground of innumerable sea-lions, yes, and of myriads of murres, a

PAINTING BY CHARLES B. HUDSON. JOHN ANDREW & SON

SEA-LIONS, PRIBILOF ISLANDS, BERING SEA.

species of diver. With our glasses we could see the murres, when we were several miles away, making the air almost thick about the rocks as with clouds of black specks. We could see the sea-lions too, great windrows of them upon the beach. We dropped anchor about two miles away and a party of seven or eight went ashore in a boat — a hazardous proceeding our Captain thought, as the fog seemed likely to drop at any moment and obliterate island and ship alike; but it did not drop — only the top of the island was obliterated. We could see the sea-lions lift themselves up and gather in groups as the boat approached their rookery.

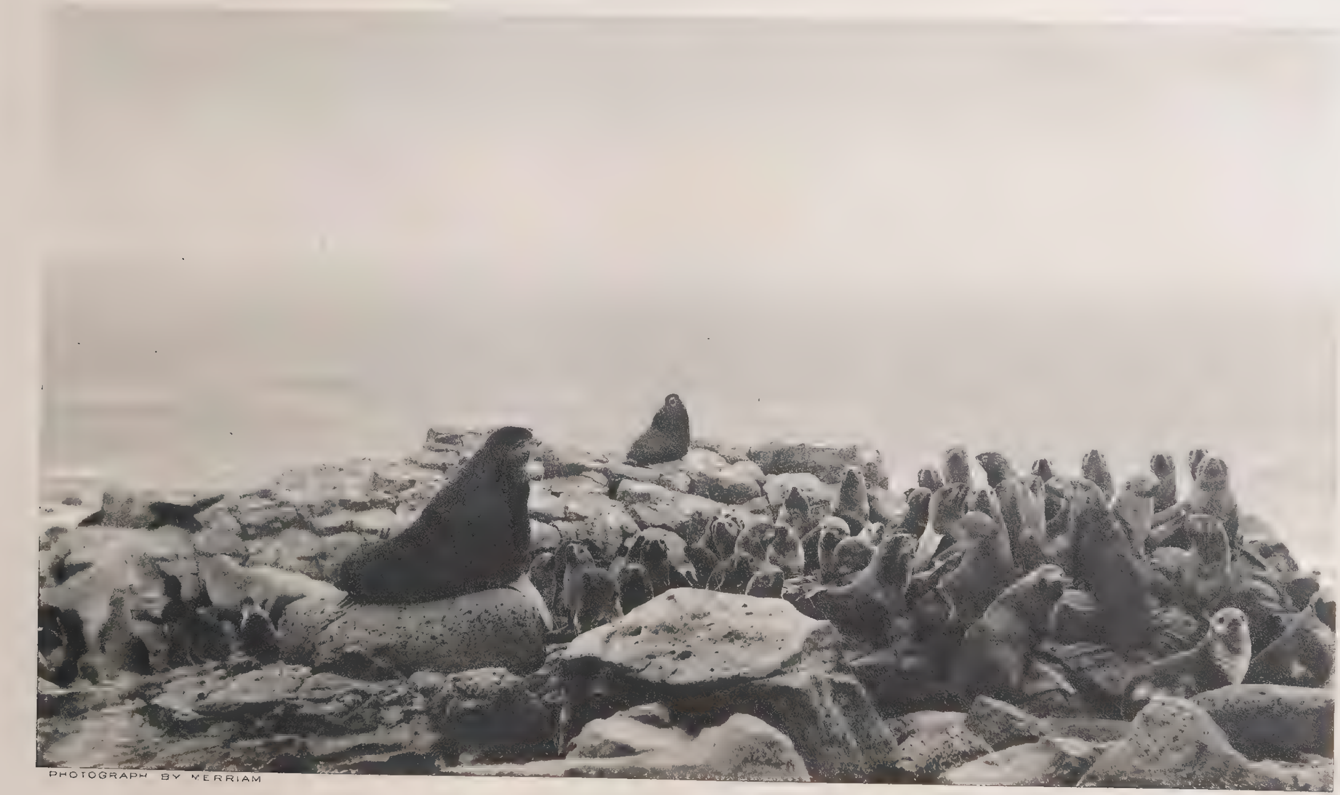
Then, after the landing was effected, they disappeared and we could see the spray rise up as the monsters plunged into the water. Hundreds of them were in a small lake a few rods back from the shore, and the spectacle which the procession of the huge creatures made rushing across the beach to the sea was described as something most extraordinary. Those who were so fortunate as to witness it, placed it among the three or four most memorable events of their lives.



SEA-LIONS.

On the afternoon of Sunday, July 9th, we dropped anchor off St. Paul Island, one of the Pribilofs, the famous resort of the fur-seals. A special permit from the Secretary of the Treasury gave us the privilege. There is no harbor here and the landing, even in calm weather, requires to be carefully managed. The island is low with a fringe of loose boulders around it, which in places looked almost like an artificial wall. The Government agent conducted us a mile or more through wild meadows starred with flowers and covered with grass nearly knee high, to the boulder-paved shore where the seals were congregated. Those of our party who had been there before, not many years back, were astonished at the diminished numbers of the animals — hardly one tenth of the earlier myriads. We visited eight or ten 'harems,' as they are called, groups of a dozen or more females, each presided over by a male or bull seal, whose position was usually upon a kind of throne or higher boulder in the midst of his wives. Every few minutes this male, who was much larger and darker in color than the females, would lift himself up and glance around over his circle as if counting his flock, then snarl at some rival a few yards away, or turn and threaten us. We gazed upon them and trained our cameras at leisure. Often a young male, wifeless and crowded back by older bulls, threatened us near the edge of the grass with continued demonstrations of anger. These unmated males were in bad humor anyway, and our appearance

TWO-HATCH BIDARKA.



PHOTOGRAPH BY MERRIAM

GILBO & CO

HAREM OF FUR SEALS, PRIBILOF ISLANDS, BERING SEA

seemed to furnish them a good excuse to give vent to their feelings. In this market the females belong to the strong. We saw several forlorn old males hovering around who had played the game and lost. They looked like bankrupt gamblers at a watering place.

The females are much smaller and lighter in color than their lords and masters. They lay very quietly among the rocks, now and then casting uneasy glances at us. Their heads are small and their jaws slender; their growls and threats are not very terrifying.

Lying there in masses or wriggling about upon the rocks, all their lines soft and flowing, all their motions hampered, the fur-seals suggested huge larvæ, or something between the grub and the mature insect. They appeared to be yet in a kind of sack or envelope. The males wriggle about like a man in a bag; but once in the water they are a part of the wave, as fleet and nimble as a fish, or as a bird in the air. In the sounds which they continually emitted they did not remind me of bulls or cows, but of sheep. The hoarse staccato bleating of the males was precisely like that of old rams, while the shriller calls of the females and the fine treble of the pups were equally like those of ewes or lambs. Some belated females were still arriving while we looked on. They came in timidly, lifted themselves upon the edge of the rocks and looked about as if to find a vacant place, or to receive a welcome. Much sparring and threatening was going on among the males, but I saw none actually come to blows. By careful movements and low tones we went about without much exciting them.

On the island we first saw the yellow poppy. It was scattered everywhere amid the grass like the crimson poppy of Europe. A wonderful display of other wild flowers was about our feet as we walked. Here also the Lapland longspur was in song, and a few snow buntings in white plumage drifted about over the flowery meads. On a big windrow of boulders along the beach near where we landed were swarms of noisy water-birds, mainly little auks called 'choochkies' by the natives.

LITTLE AUKS, OR 'CHOOCHKIES.'

SIBERIA.

According to our original program our outward journey should have ended at the Seal Islands, but Mrs. Harriman expressed a wish to see Siberia, and if all went well, the midnight sun. "Very well," replied Mr. Harriman, "we will go to Siberia," and toward that barren shore our prow was turned. It was about 8 o'clock in the evening when we left St. Paul; a dense fog prevailed, hiding the shore. We had not been an hour under way when a horrible raking blow from some source made the ship tremble from stem to stern; then another and another, still more severe. The shock came from beneath: our keel was upon the rocks. Many of the company were at dinner; all sprang to their feet and looked the surprise and alarm they did not speak. The engines were quickly reversed, a sail was hoisted, and in a few moments the ship's prow swung off to the right, and the danger was passed — we were afloat again. The stern of the ship, which was two feet deeper in the water than the bow, had raked across the rocks. No damage was done, and we had had a novel sensation, something analogous I fancy to the feeling one has upon land during an earthquake.

Some of us hoped this incident would cause Mr. Harriman to turn back. Bering Sea is a treacherous sea; it is

EAST SIDE OF ENTRANCE

PHOTOGRAPHS BY MERRIAM

PLOVER BAY, SIBERIA
ESKIMO SETTLEMENT ON SPIT ON RIGHT

shallow; it has many islands; and in summer it is nearly always draped in fog. But our host was a man not easy to turn back; in five minutes he was romping with his children again as if nothing had happened. But the ship's course was changed to southeast, around Walrus Island. It did indeed look for a while as if we had more than half a mind to turn back. But in a couple of hours we were headed toward Siberia again and went plunging through the fog and obscurity with our 'ferocious whistle,' as Professor Emerson characterized it, tearing the silence, and with it our sleep, to tatters. The next day, the 10th, we hoped to touch at the Island of St. Matthew, but we missed it in the thick obscurity and searching for it was hazardous, so we went again northward.

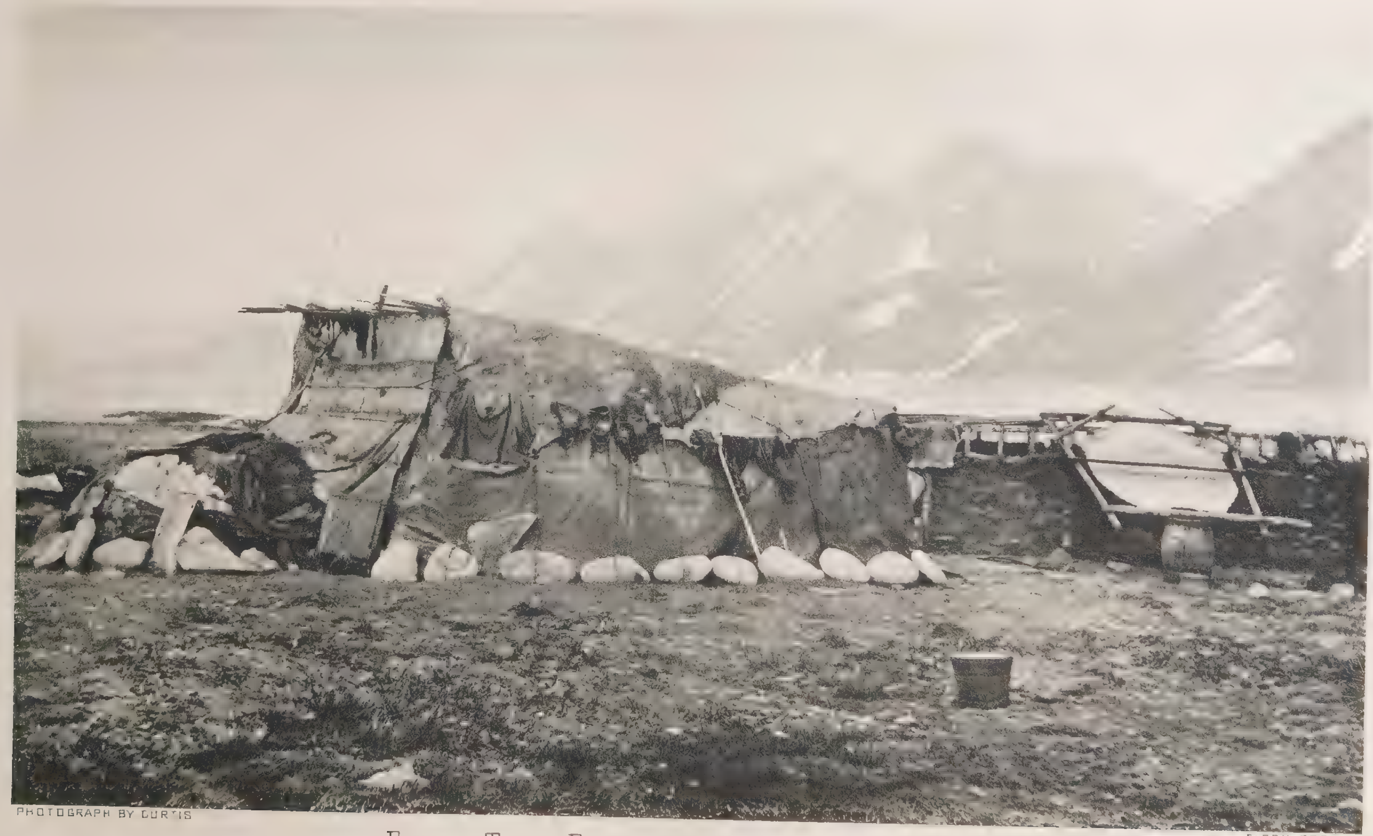
The fog continued on the 11th till nearly noon, when we ran into clear air and finally into sunshine, and in the early afternoon the coast of Siberia lay before us like a cloud upon the horizon — Asia at last, crushed down there on the rim of the world as if with the weight of her centuries and her cruel Czar's iniquities. As we drew near, her gray, crumbling, decrepit granite bluffs and mountains, streaked with snow, helped the illusion. This was the old world indeed. Our destination was Plover Bay, where at six in the afternoon we dropped anchor behind a long crescent-shaped sand spit that put out from the eastern shore. On this sand spit was an Eskimo encampment of skin-covered huts which was soon astir with moving forms. Presently eight of the figures

ESKIMO SKIN HUTS OR 'TOPEKS,' PLOVER BAY, SIBERIA.

58106

were seen moving down to the beach. A boat was launched and filled and came rapidly to the ship's side. It was made of walrus skin stretched over a wooden frame and was a strong, shapely craft. Its occupants also were clad in skins. There were three women and nine men in the boat, but one had to look very closely to tell which was which. The men's crowns were shaved, leaving a heavy fringe of coarse black hair around their heads. One of them, probably thirty or thirty-five years of age, stood up in the bow of the boat, and with his cloak of reddish-gray fur, was really a handsome man. He had a thin black beard and regular clear-cut features and looked as one fancies an old Roman of his age might have looked. They were evidently drawn to us partly by curiosity and partly by the hope of gifts of tobacco and whiskey. The tobacco was freely showered upon them by Mr. Harriman, and was as eagerly seized, but the whiskey was not forthcoming.

Our own boats were rapidly lowered and we were soon upon Asiatic soil, gathering flowers, observing the birds, and strolling about among the tents and huts of the natives. We bought skins and curios of them or bartered knives and cloth for such things as they had to dispose of. They would take our silver dollars but much preferred skinning knives or other useful articles. They were not shy of our cameras and freely admitted us to the greasy and smoky interiors of their dwellings. As the Eskimos stood regarding us they would draw their hands into their sleeves, after the manner of children on a cold morning. Their skin costumes gave them a singular stuffed appearance. One was reminded of grotesque dolls stuffed with bran or sawdust. This effect was due in part to the awkward cut of their garments and to the fact that the skins were made up hair side in. Some of the natives showed a strain of white or European blood; whalers bound for



PHOTOGRAPH BY CURTIS

ELSON BOSTON

Eskimo Topek, Plover Bay, Siberia, July 1899

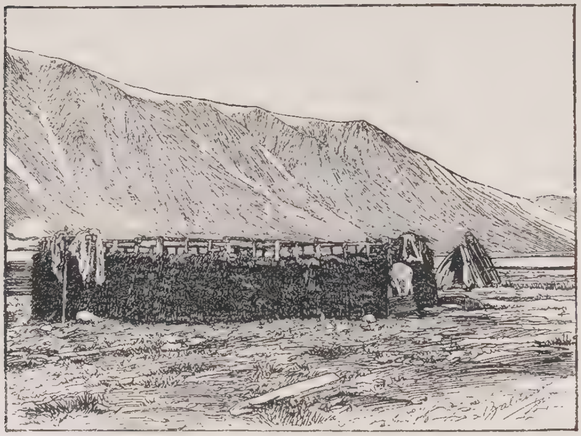
the Arctic Ocean sometimes stop here and corrupt them with bad morals and villainous whiskey.

Throughout the village seals and seal oil, reindeer skins, walrus hides, and blubber were most in evidence. Back of the tent I saw a deep, partly covered pit in the ground, nearly filled with oil, and a few rods farther off others were seen. The bones of whales served instead of timbers in most of the rude structures. The winter houses were built by standing up a circle of whale ribs about two feet apart, and filling up the interstices with turf, making a wall two feet thick. For a roof they used walrus hides, resting upon poles. In my walk over this crescent of land I came here and there upon the huge vertebræ of whales, scattered about and looking like the gray weather-worn granite boulders on a New England farm.

GROUP OF ESKIMOS, PLOVER BAY.

Beyond the present site of the encampment I saw the ruins of an older or earlier village, the foundations of whale bones partly overgrown by the turf.

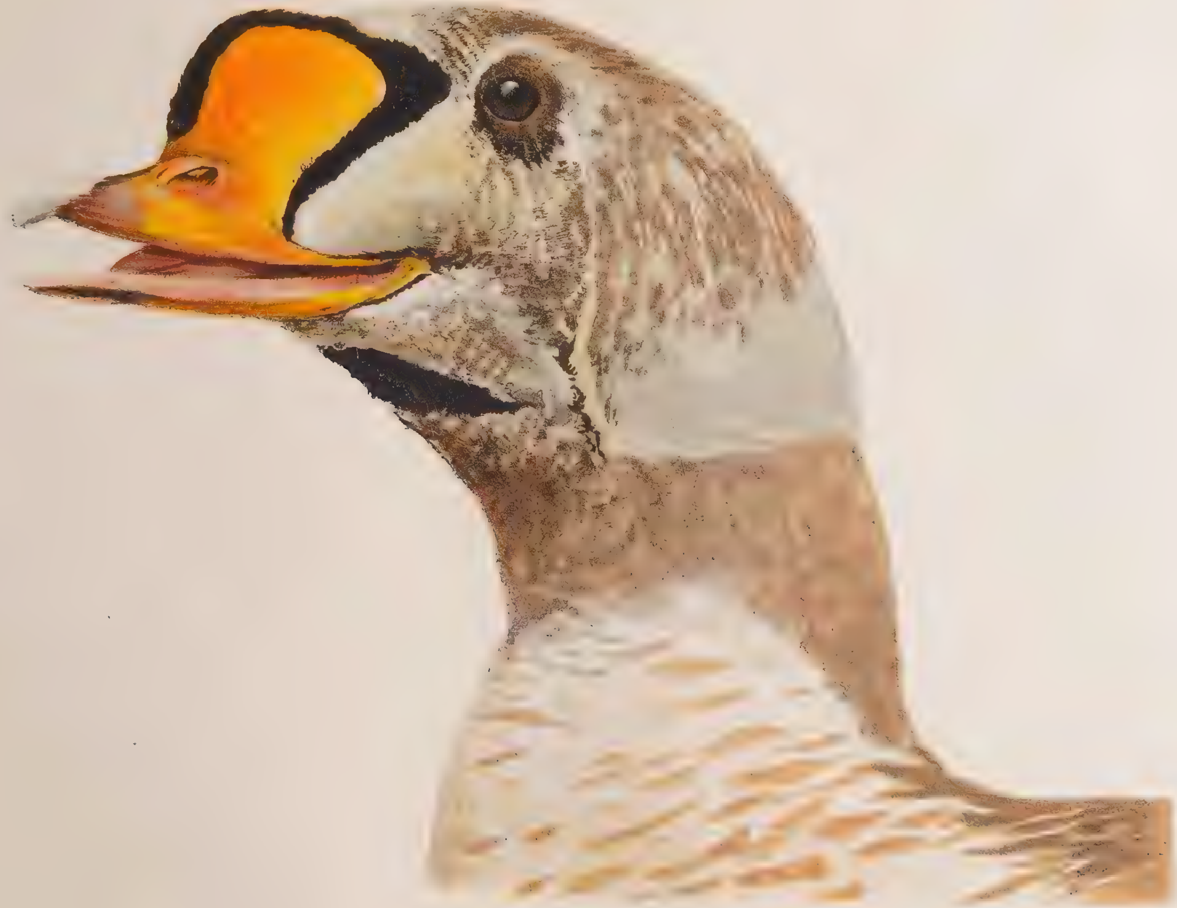
As we came in at one end of the encampment most of the dogs went out at the other end. They had never seen such looking creatures, and they fled off toward the mountain, where they sat down and howled their mournful protest. Some of the children were frightened too; one youngster of five or six years, stuffed like a small scarecrow, riding astride its mother's neck, cried and yelled vigorously as we approached. The sun was bright but the air was very chilly, the mercury standing at about 38° Fahr. We were within 120 miles of the Arctic circle. The slender peninsula we were on is a few hundred feet wide; it is marshy in some places, but for the most part dry and covered with herbage. Here was the yellow poppy blooming, and two species of saxifrage. In my walk I came upon a large patch of ground covered with a small low pink primrose. The ground was painted by it. But the prettiest flower we found was a low forget-me-not, scarcely an inch high, of deep ultramarine blue — the deepest, most intense blue I ever saw in a wild flower. Here also we saw and heard the Lapland longspur and the yellow wagtail. A flock of male eider ducks was seen in the bay.



UNFINISHED ESKIMO WINTER HOUSE: CIRCULAR FRAME OF WHALE BONES, FILLED WITH SOD.

PORT CLARENCE.

We traveled two hours in Asia. I am tempted to write a book on the country, but forbear. At eight o'clock we steamed away along the coast toward Indian Point, in an unending twilight. We reached the point at midnight, but the surf was running so high that no landing was attempted. Then we stood off across Bering Strait for Port Clarence in Alaska, where we hoped to take water,



PAINTING BY FUERTES

[illegible]

KING EIDER, SOMATERIA [illegible]

Port Clarence, July 12, 18[illegible]. Male in breeding plumage

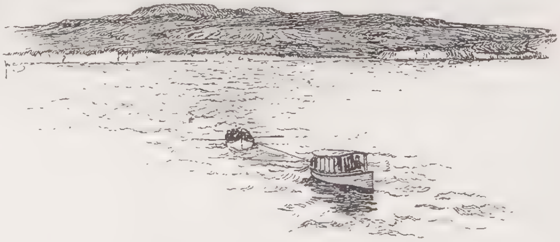
passing in sight of King Island and the Diamedes, and about noon again dropped anchor behind a long sickle-shaped sand spit, which curves out from the southern headland, ten or twelve miles away. In the great basin behind this sand bar a dozen vessels of the whaling fleet were anchored and making ready to enter the Arctic Ocean, where some of them expected to spend the winter. The presence of the fleet had drawn together upon the sand bar over two hundred Eskimo for trade and barter with the whalers. Their shapely skin boats, filled with people — men, women, children, and dogs, often to the number of twenty — soon swarmed about our ship. They had all manner of furs, garments, baskets, ornaments and curios for sale or for barter. An animated and picturesque scene they presented and dozens of cameras were leveled at them. In dress they presented a much more trim and shapely appearance than the people we had just left in Siberia, though much the same in other respects.

ESKIMOS ALONGSIDE SHIP IN 'OOMIAKS' OR SKIN BOATS.

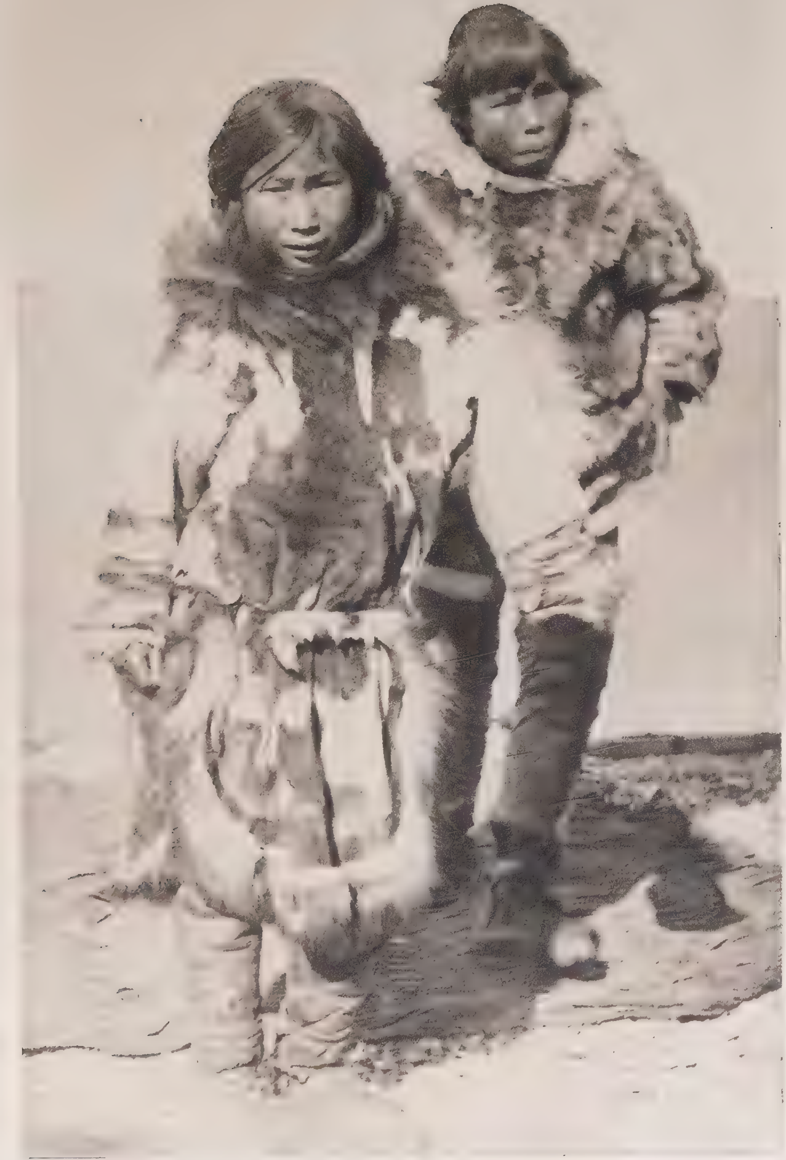
Some of the younger women were fairly good looking and their fur hoods and fur cloaks became them well. I noticed that the babies cried very much, as at home. Most of the women were dressed in hair seal or reindeer skins, but some wore an outer garment of colored cotton cloth, hanging loosely to the knees. It was interesting to see them tuck their babies under this garment from the rear. The mother would bend forward very low, thrust the child under the garment at her hips and by a dexterous wriggling movement of her body propel it forward till its head protruded in its place above her shoulder. One marked its course along her back as he does a big morsel down a chicken's gullet.

ESKIMO MAN, WOMAN, AND CHILD, PORT CLARENCE, ALASKA.

Some of the captains of the whalers came aboard our ship to advise us about taking water. They were large, powerful, resolute looking men, quite equal, one would say, to the task before them. Water was to be procured from a stream that ran in from the tundra on the southern shore of the bay about a dozen miles distant. Leaving part of our company to visit the whalers and the Eskimo, the ship steamed away with the rest of us for



PORT CLARENCE TUNDRA.



PHOTOGRAPH BY MERRIAM GILBO & CO

ESKIMO BOY AND GIRL, PORT CLARENCE, ALASKA

water, and in due course anchored near the mouth of the little stream. This gave us an opportunity to spend several hours upon the real tundra. Cape Nome was on the other side of the peninsula, fifty miles away, but the fame of the gold fields had not then reached us. We may have walked over ground rich in gold but our mining expert failed to call our attention to the fact. As we approached the land it looked as smooth as if it had just been gone over with a mowing machine. My first thought was, "Well, the people are done haying here." The tundra was of a greenish brown color and rose from a long crescent-shaped beach in a very gentle ascent to low cones and bare volcanic peaks many miles away. It had the appearance of a vast meadow lifted up but a few degrees above the level. This then was the tundra that covers so much of North America — where the ground remains perpetually frozen to an unknown depth, thawing out only a foot or so on the surface during the summer. How eagerly we set foot upon it; how quickly we dispersed in all directions, lured on by the strangeness. In a few moments our hands were full of wild flowers which we kept dropping to gather others more taking, to be in turn discarded as still more novel ones appeared. I found myself very soon treading upon a large pink claytonia or spring beauty, many times larger than our delicate April flower of the same name. Then I came upon a bank by the little creek covered with a low nodding purple primrose; then masses of the shooting-star attracted me, then

ESKIMO CHILDREN, PORT CLARENCE.

several species of pedicularis, then a yellow anemone and many saxifrages. A complete list would be a long one of flowers blooming here within sixty miles of the Arctic circle, in a thin coat of soil resting upon perpetual frost. There were wild bees here too, to cross-fertilize the flowers, and bumble-bees boomed by very much as at home. And mosquitoes, how they swarmed up out of the grass upon me when in my vain effort to reach a little volcanic cone that rose up there before me like a haystack in a meadow, I sat down to rest. I could not seem to get nearer the haystack, though I sometimes ran to get away from the mosquitoes. The tundra proved far less smooth to the feet than the eye had promised. It was wet and boggy. A tundra is always wet in summer as the frost prevents any underground drainage. But it was very uniform and the walking not difficult; moss, bogs, grass and flowering plants covered it everywhere. The Savanna sparrow and the longspur started up before me as I walked, and, as I descended toward a branch of the little creek after an hour's tramp, a new note caught my ear. Presently I saw some plovers skimming over the ground in advance of me, or alighting upon tussocks of moss and uttering a soft warbling call. They proved to be golden plovers; I had evidently invaded their breeding grounds and they were making their musical protest. At times the males, as they circled about me, warbled in the most delightful manner — truly a rich warble. There was in it, underneath its bright joyousness, a tone of soft pleading and entreaty that was very moving — the voice of the tundra — soft, alluring, plaintive, beautiful. The golden plover is mottled black and white with a rich golden tinge on his back. It is a wonderful flyer. We found it near the Arctic circle; six months later probably the same birds might have been found near the Antarctic in Patagonia.

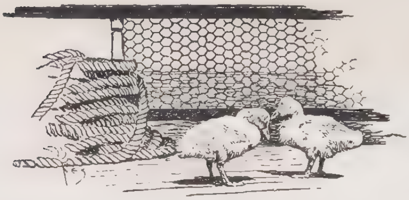
In a patch of willows along the creek the gray-cheeked thrush was in song, and the Townsend fox sparrow and Canada tree sparrow were found. I saw one of the thrushes do what I never saw any of the thrush kind do before: it hovered in the air fifty feet or more above the moor and repeated its song three times very rapidly. As there were no trees to give it a lofty perch, it perched upon the air.

It was a very novel experience, this walking over the tundra; its vastness, its uniformity, its solitude, its gentleness, its softness of contour, its truly borean character — the truncated hills and peaks on the near horizon suggesting huge earthworks, the rounded and curved elevations like the backs of prostrate giants turned up to the sun, and farther off the high serrated snow-streaked ranges on the remote horizon to the north — all made up a curious and unfamiliar picture.

We were fortunate in having clear bright skies during our stay in these high latitudes. But the nights were starless; the sun was so near, there was so much light in the sky that the stars were blotted out. The sun set about ten and rose about two, dipping down but a little way below the horizon.

ST. LAWRENCE ISLAND.

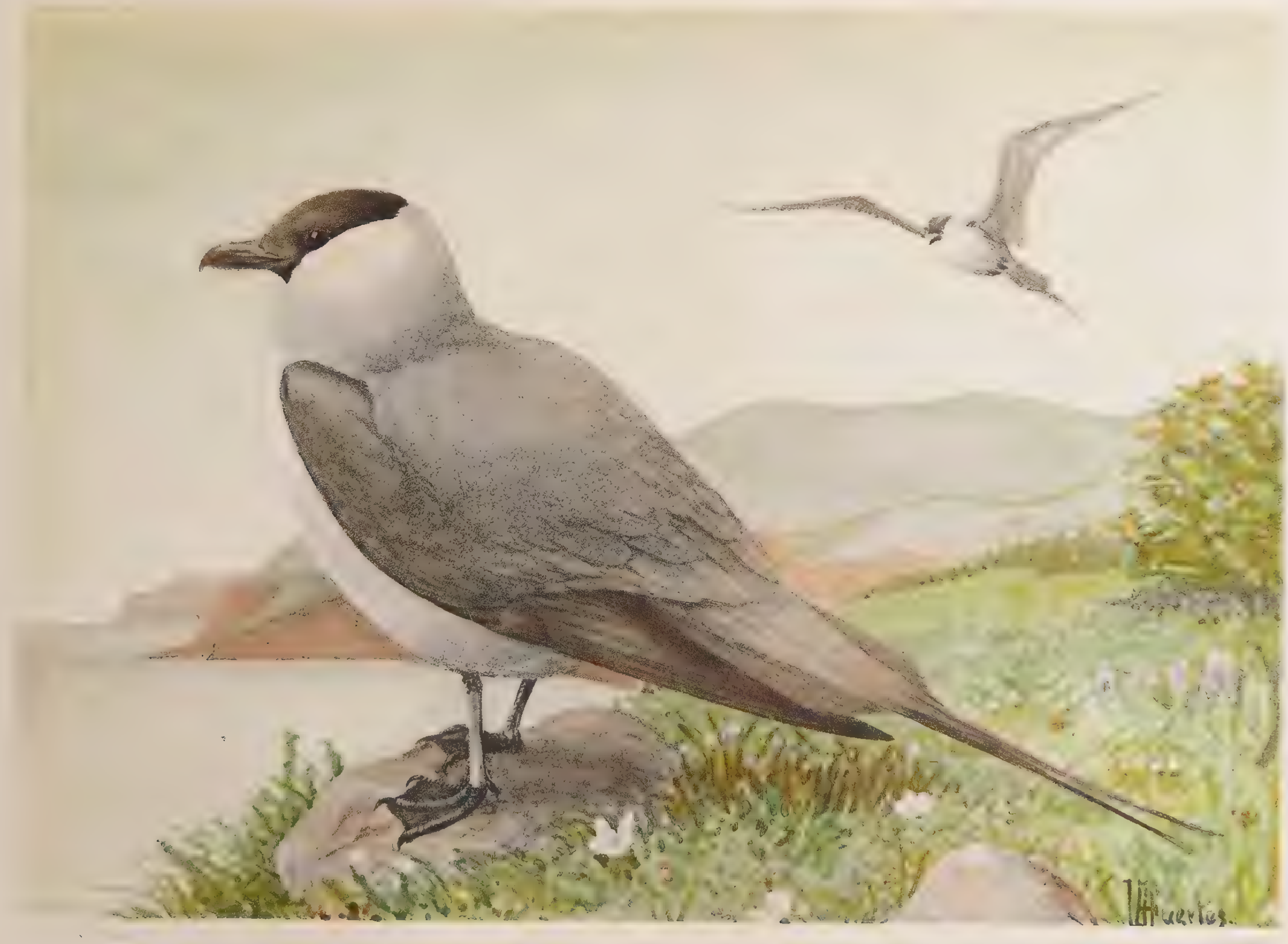
Port Clarence was the northernmost point we reached. A little farther north the ice pack closed the gateway to the Arctic Ocean. An excursion into the ice to see the midnight sun did not hold out inducements enough to offset the dangers. So in the early morning of July 13th, we steamed away on the return trip. Before noon we were again in the thick veil of fog with which Bering Sea always seems to cover her face. Near nightfall, with a stiff wind blowing, we anchored off St. Lawrence Island and two boat loads of our people went ashore. St. Lawrence is a large island at the gateway of the Arctic Ocean and in spring the ice floes from the north often strand polar bears upon it. Our hunters still dreamed of bears. The shore was low and marshy and the high land miles away hidden by the canopy of fog resting upon it. In his walk one of our doctors saw the backs of two large white objects, showing above a little swell in the land inside an inlet. Here evidently were the polar bears they were in quest of. The Doctor began to stalk them, replacing the shells in his gun with heavier ones as he crept along. Now he has another glimpse of the white backs; they are moving and can be nothing but bears. A few moments more and he will be within close range, when lo! the heads and long necks of two white swans come up above the bank! The Doctor said he never felt so much like a goose before in his life. The birds and flowers found were about the same as those we had already seen.


YOUNG SWANS CAUGHT ON ST. LAWRENCE ISLAND.

Not many years ago there were on St. Lawrence Island many encampments of Eskimo embracing several hundred people. Late one autumn some whalers turned up there with the worst kind of whiskey, with which they wrought the ruin of the natives, persuading them to exchange most of their furs and other valuables for it, and leaving them so debauched and demoralized that nearly all perished of cold and hunger the following winter. Village after village was found quite depopulated, the people lying dead in their houses.

HALL AND ST. MATTHEW ISLANDS.

From St. Lawrence Island our course was again through fog to St. Matthew Island, which we missed

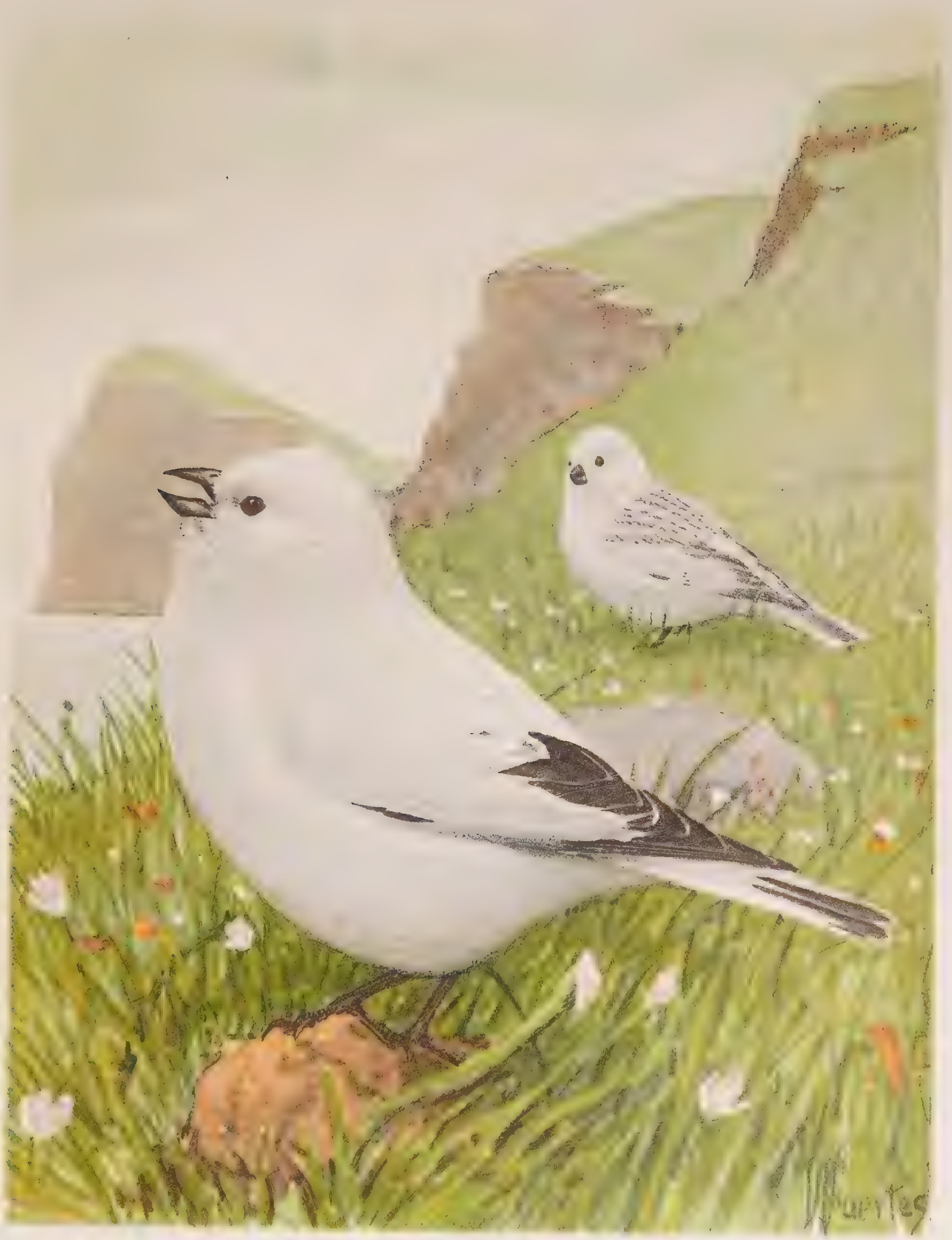

L A Fuertes

on our way up and which we now found late in the afternoon of the next day. Our first stop was at Hall Island, which once probably formed a part of St. Matthew, but is now separated from it by only a narrow strait. This was our first visit to uninhabited land, and to a land of such unique grace and beauty that the impression it made can never be forgotten — a thick carpet of moss and many-colored flowers covering an open smooth undulating country that faced the sea in dark basaltic cliffs, some of them a thousand feet high. The first thing that attracted our attention was the murres —‘ arries ’ the Aleuts call them — about their rookeries on the cliffs. Their numbers darkened the air. As we approached, the faces of the rocks seemed paved with them, with a sprinkling of gulls, puffins, black cormorants and auklets. On landing at a break in the cliffs where a little creek came down to the sea, our first impulse was to walk along the brink and look down upon the murres and see them swarm out beneath our feet. On the discharge of a gun the air would be black with them, while the cliffs apparently remained as populous as ever. They sat on little shelves or niches with their black backs to the sea, each bird covering one egg with its tail feathers. In places one could have reached down and seized them by the neck, they were so tame and so near the top of the rocks. I believe one of our party did actually thus procure a specimen. It was a strange spectacle and we lingered long looking upon it. To behold sea fowls like flies in uncounted millions, was a new experience. Everywhere in Bering Sea the murres swarm like vermin. It seems as if there was a murre to every square

ROOKERY ROCK, OFF HALL ISLAND, BERING SEA.

yard of surface. They were flying about over the ship or flapping over the water away from her front at all times. I noticed that they could not get up from the water except against the wind; the wind lifted them as it does a kite. With the wind or in a calm they skimmed along on the surface, their heads bent forward, their wings beating the water impatiently. Unable to rise they would glance behind them in a frightened manner, then plunge beneath the waves until they thought the danger had passed. At all hours of the night and day one could hear this impatient flapping of the frightened murres. The bird is a species of diver, nearly as large as a black duck. Their tails are so short that in flying their two red feet stretched behind them do the duty of a tail. It is amusing to see them spread or contract them in turning or changing their course, as the case required. After we had taken our fill of gazing upon the murres came the ramble away from the cliffs in the long twilight through that mossy and flowery solitude. Such patterns and suggestions for rugs and carpets as we walked over for hours; such a blending

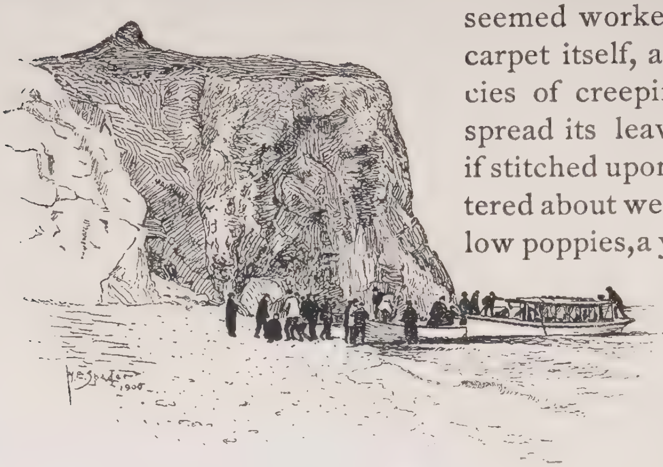
MURRES.


Fuertes

of grays, drabs, browns, greens and all delicate neutral tints, all dashed with masses of many-colored flowers, it had never before been my fortune to witness, much less to walk upon. Drifting over this marvelous carpet or dropping down upon it from the air above was the hyperborean snowbird, white as a snowflake and with a song of great sweetness and power. With lifted wings the bird would drop through the air to the earth pouring out its joyous ecstatic strain. Out of the deep twilight came also the song of the longspur, delivered on the wing and touching the wild solitude like the voices of children at play. Then there was the large Aleutian sandpiper that ran before me and uttered its curious wild plaint. The robber jaeger was there too — a very beautiful bird, a sort of cross between a hawk and a gull — sitting quietly upon the moss and eyeing our movements. On the top of the grassy bank near the sea some of the party found the nest and young of the snowy owl. Fragments of the bodies of murres and ducks lay upon the ground beside it.

The most novel and striking of the wild flowers was a species of large white claytonia growing in rings the size of a tea plate, floral rings dropped here and there upon the carpet of moss. In the center was a rosette of pointed green leaves pressed close to the ground; around this grew the ring of flowers made up of thirty or forty individuals all springing from the same root, their faces turned out in all directions from the parent center. In places they were so near together one could easily step from one circle to another.

The forenoon of the next day, the 15th, we spent upon St. Matthew, and repeated our experience of walking over ground covered with nature's matchless tapestry. Here, too, a thick heavy carpet of variegated mosses and lichens had been stretched to the very edge of the cliffs, with rugs and mats of many colored flowers—pink, yellow, violet, white; saxifrage, chickweed, astragalus, claytonia—dropped here and there upon it. Sometimes the flowers seemed worked into the carpet itself, and a species of creeping willow spread its leaves out as if stitched upon it. Scattered about were the yellow poppies, a yellow and a red pedicularis, and a rare and curious blue flower in heads—the name of which I have forgotten. On the highest point, the blue and purple astragalus covered large areas, but the most novel of all the flowers was a little species of silene with a bluish ribbed flower precisely like a miniature Chinese lantern.



LANDING AT ST. MATTHEW ISLAND.

The highest point of the island was enveloped most of the time in fog and cloud. While groping my way upon one of these cloud summits, probably 1,000 feet above the sea which flowed at its base, I came suddenly upon a deep cleft or chasm which opened in the moss and flowers at my feet and led down between crumbling rocky walls at a fearful incline to the beach. It gave one a sense of peril that made him pause quickly. The wraiths of fog and mist whirling through and over it enhanced its dreadful mystery and depth. Yet I hovered about it, retreating and returning quite fascinated by the contrast between the smooth flowery carpet upon which I stood and the terrible yawning chasm. When the fog lifted a little and the sun gleamed out, I looked down this groove into the ocean, and Tennyson's line came to mind as accurately descriptive of the scene:

> "The wrinkled sea beneath him crawls."

Another curious effect was the bottom of the sea visible a long way out from shore. The water seemed suddenly to become shallow or else to take on a strange transparency; the color and configuration of the rocky floor were surprisingly distinct.

A new species of small blue fox was found and killed upon the island, and a sorry apology for a fox it was.[1] It looked as if it might have been singed or else skinned once and this was the second growth of fur. The polar bears which our sportsmen had hoped for were not found, though the deep broad unused trails leading back from the cliffs had doubtless been made by them. Nothing is plainer than that one cannot go to Alaska, or probably to any other country and say: "Come, now, we will kill a bear," and kill it, except as a rare streak of luck. It is a game at which two can play, and the bear plays his part extremely well. All large game has its beat or range. The first thing to be done is to find this beat, which may take days or weeks, then the trial of strategy begins. If you outgeneral the bear you may carry off his pelt.

We found the snowbunting nesting in crevices of the rocks. It was probably compelled to this course to escape the foxes. This was the type locality for this bird and it was very abundant. The rosy finch also was seen along the cliffs. There were snowbanks on the beach by the sea, and piles of driftwood, most of the large tree trunks doubtless brought

CAPE UPRIGHT, ST. MATTHEW ISLAND.

---

[1] This was the Hall Island Arctic fox (*Vulpes hallensis* Merriam) in worn summer dress; in winter it is snow white.—Ed.

down by the Yukon, and many hewn and sawed timbers from wrecked vessels.

THE RETURN TRIP.

Returning to Unalaska we tarried a few hours at Dutch Harbor to take in water and coal, and then, for the first time, our good ship pointed eastward and toward home. A steamer from the Yukon was also in Dutch Harbor with a couple of hundred returning gold seekers on board. As we steamed away I saw several of them far up on the green mountain side on our left looking down upon us. They were barely distinguishable on that broad high emerald slope. Just out of the harbor we saw myriads of fulmars, a kind of petrel. The sea for miles was black with them. We touched again at the Shumagin Islands to pick up the party we had left there on the 7th; and on the 20th were again at sweet pastoral Kadiak. The wild roses were in bloom, very large and fine, and armfuls of them were brought in to deck the table in celebration of the birthday of one of Mr. Harriman's daughters. While here we took an afternoon to visit Long Island, ten or twelve miles away, where there was another fox farm. It was a low wooded island of several hundred acres stocked with about a thousand blue foxes. Some of the animals peeped shyly at us from around the corner of an old barn, others growled at us from beneath it, while others still lifted up their voices in protest from the woods. A great many fish, trout and salmon, were drying in the sun from poles on the beach in front. These were for the foxes in winter. Magpies were common here and very tame. The farmer had a comfortable home and a

THE 'DORA,' WHICH CARRIES THE MAIL TO KADIAK.

Painting by R Swain Gifford

[illegible]

MT. ST. ELIAS FROM YAKUTAT BAY

Alt. 18,000 ft.

pleasant situation, and life there must have many attractions. The experiment of growing silver-black foxes had been tried, but did not succeed. The animals were so wild, and proved to be such dainty feeders that the undertaking was abandoned. They required live game for food.

On leaving Kadiak we again ran into Cook Inlet and put ashore two parties. But there was a sudden change of plan, the parties were recalled and we were soon again at sea, homeward bound.

ST. ELIAS AND THE FAIRWEATHER RANGE.

On the 23d we had such a view of St. Elias and all that grand range as is seldom granted to voyagers. One of our artists, Mr. Gifford, was up at two o'clock in the morning, and finding the summit just smitten with the rising sun, painted till his hands were too cold to hold the brush.

We again ran into Yakutat Bay, but all I have to record is our feast of Yakutat strawberries. The Indians brought them to us in baskets. They looked pale and uninviting, but their flavor was really excellent. They grow in great abundance in the sand on the beach. On the 24th we steamed all day off the Fairweather Range, which lay there before us without a cloud or film to dim its naked majesty. We were two or three hours in passing the great peak itself. Piled with snow and beaten upon by a cloudless sun its reflected light shone in my stateroom like that of an enormous full moon. This was a day in blue and white — blue of the sea and sky and white of the mountains — long to be remembered but not to be described. The peak of St. Elias, standing above a band of cloud, kept us in its eye till we were 150 miles down the coast.

On the 25th we were at Juneau again, taking coal and water. The only toad I saw in Alaska I saw this day fumbling along in the weeds by the roadside, just out of Juneau. Here also I gathered my first salmon berries —

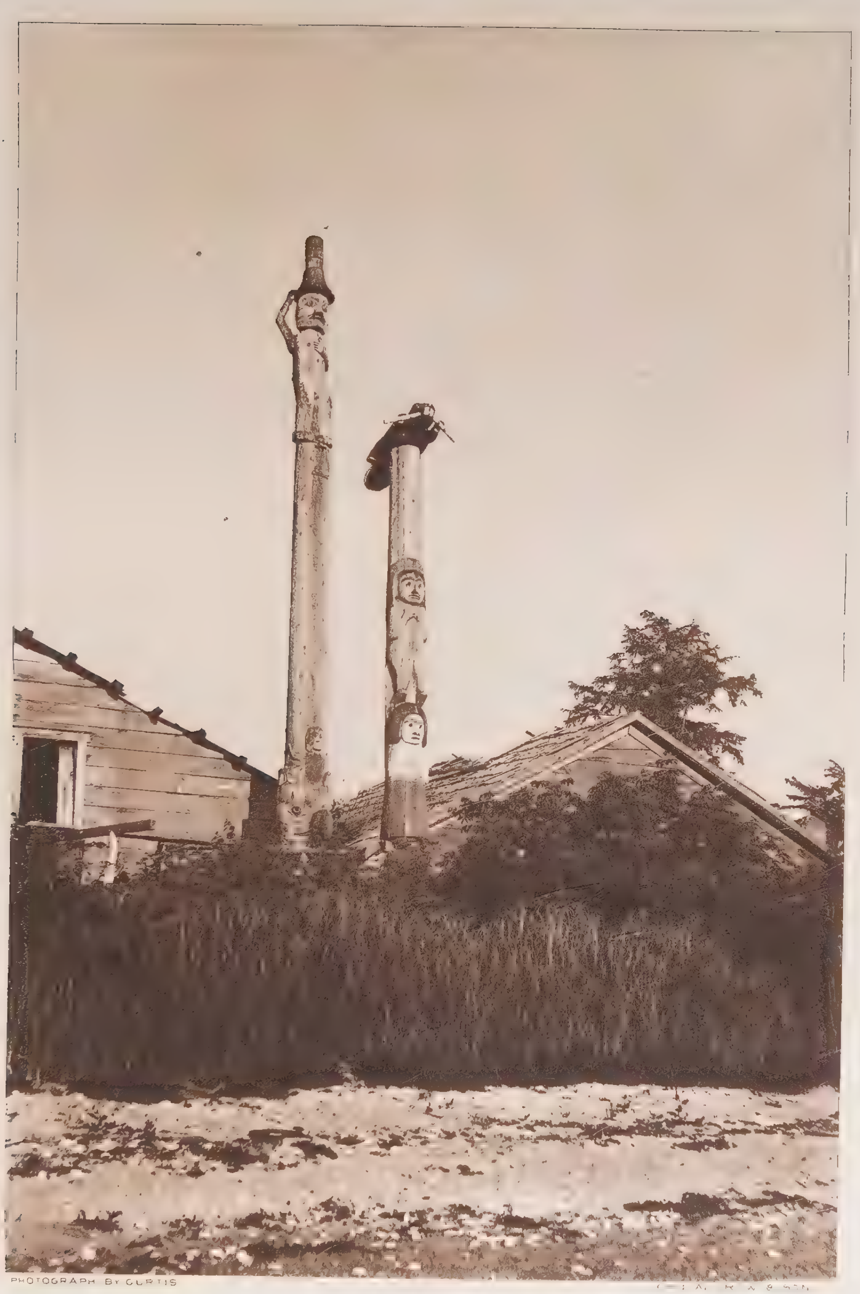
a kind of raspberry an inch in diameter, with a slightly bitterish flavor, but very good.

The lovely weather still favored us on our return trip down the inland passage. Under date of the 26th I find this entry in my note book:

"Bright and warm and still; all day down the inside passage. At one point in Tongass Narrows, fishermen taking salmon: a large seine gathered in between two row boats, one of them bright red, and men in each with forks picking the fish out of the net and throwing them into the boat. The salmon glance and wriggle in the sun like bars of silver. Bristling forests, tufted islands, snow-striped peaks on every side. A soft placid day when nature broods and dreams, both sea and shore wrapped in a profound midsummer tranquility."

DESERTED INDIAN VILLAGE NEAR CAPE FOX.

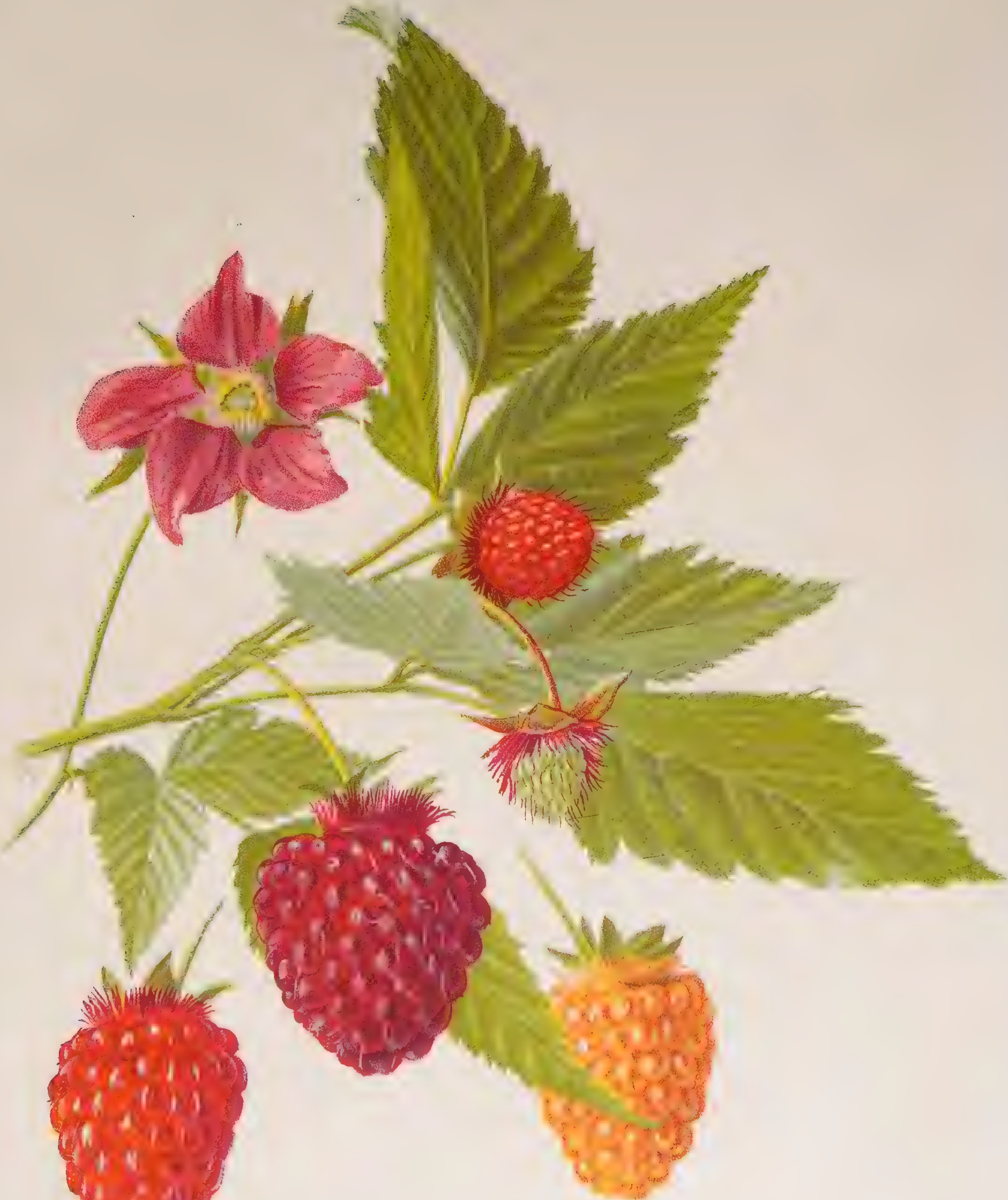
In the afternoon we anchored off a deserted Indian village north of Cape Fox. There was a row of a dozen houses on the beach of a little bay, with nineteen totem poles standing along their fronts. These totem poles were the attraction. There was a rumor that the Indians had nearly all died of smallpox a few years before and that the few survivors had left under a superstitious fear, never to return. It was evident that the village had not been occu-



PHOTOGRAPH BY CURTIS

JOHN ANDREW & SON

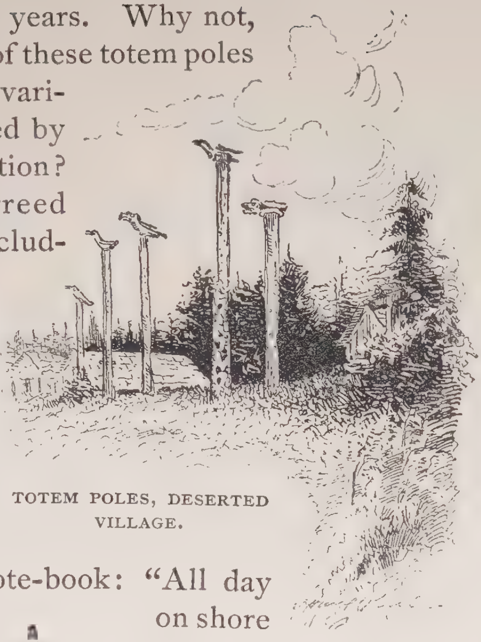
TOTEM POLES AT DESERTED VILLAGE

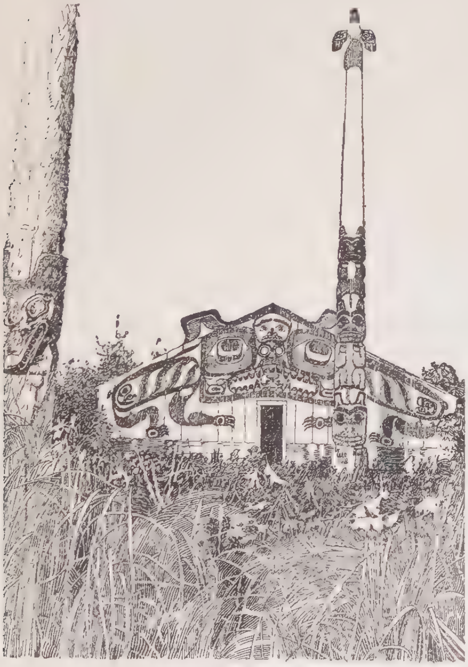


SALMONBERRY
Rubus spectabilis Pursh, Kadiak

Painting By Walpole.

pied in seven or eight years. Why not, therefore, secure some of these totem poles for the museums of the various colleges represented by members of the expedition? This was finally agreed upon, and all hands, including the ship's crew, fell to digging up and floating to the ship five or six of the more striking poles. This occupied us till the night of the 27th.


TOTEM POLES, DESERTED VILLAGE.


CHIEF'S HOUSE, DESERTED VILLAGE.

Under this date I find this note in my note-book: "All day on shore by the deserted Indian village. Clear and hot. I sit in the shade of the spruces amid huge logs of driftwood on the upper edge of the beach, with several Indian graves at my back, under the trees, and write up my notes — the ship at anchor out in the bay a mile away. Aided by the sailors the men are taking down totem poles and towing them to the ship with the naphtha launches. As I write there are many birds in the trees and bushes near me — the rufous hummer, the rufous-backed chickadee, the golden-crowned kinglet, the pine siskin. Back in the woods I hear the russet-backed thrush and Steller jay. With my lunch I have some yellow salmon berries gathered near by."

"*July 28th.* Woke up this morning hearing the birds sing through my open window. I looked out into the dusky wooded side of a mountain nearly within a stone's throw. We were in Grenville Channel, the skies clear, the sun shining full upon the opposite shore. Presently we are passing one of those bewitching alcoves or recesses in the shore where the mountains form a loop miles deep around an inlet of blue sea, with snow-crowned peaks above great curves of naked rock at the head of it. Now we cut one of those curious tide lines, where two currents of water of different colors meet. The dividing line is sharp and clear for a long distance."

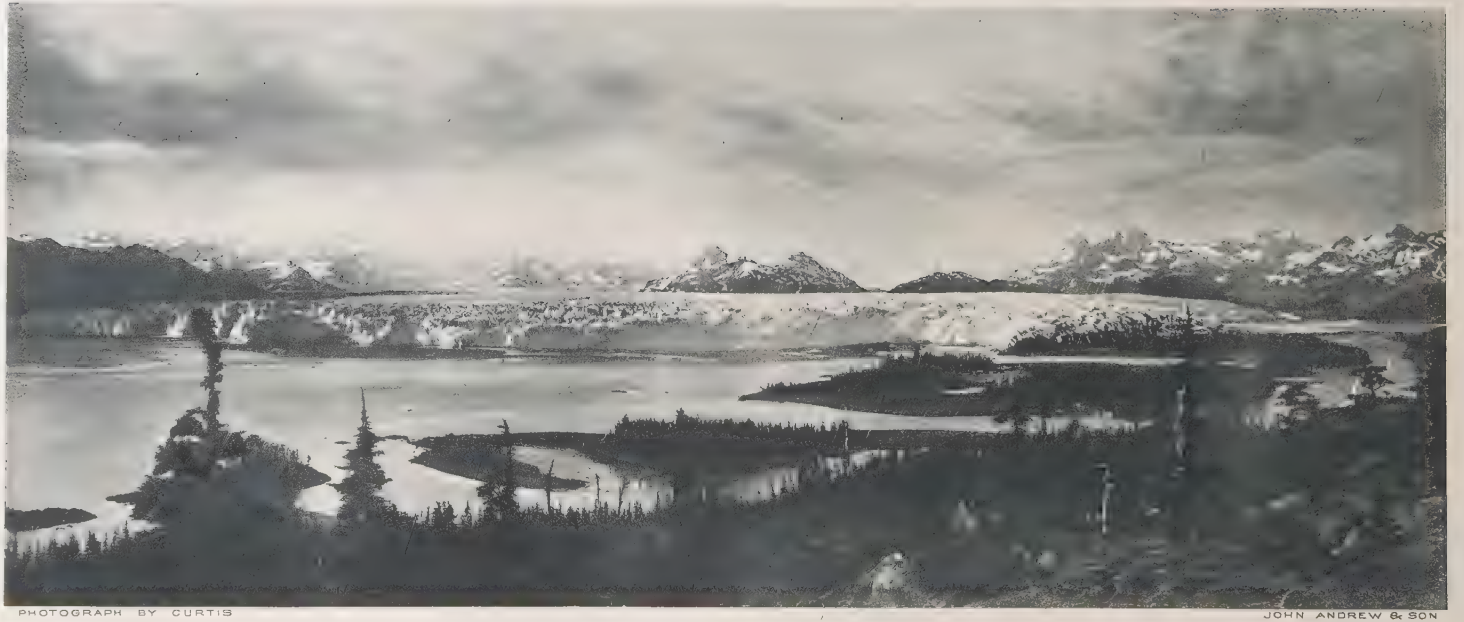
The next day, which was still bright and warm, there was a film of smoke in the air in the morning which increased as we went south. We were nearing the region of forest fires. When we reached Seattle on the 30th this smoke had so increased that all the great mountains were hidden by it as effectually as they were by the clouds when we entered upon the voyage.

We had three tons of coal left in our bunkers, but of our little stock farm down below only the milch cow remained. She had been to Siberia and back and had given milk all the way. No voyagers were ever more fortunate than we. No storms, no winds, no delays or accidents to speak of, no illness. We had gone far and fared well.

PAINTING BY F. S. DELLENBAUGH

MT FAIRWEATHER, FROM THE NORTHWEST

Altitude 15300 ft. Color of water due to glaciers



PHOTOGRAPH BY CURTIS JOHN ANDREW & SON

COLUMBIA GLACIER, FROM HEATHER ISLAND

COLUMBIA GLACIER

NOTES ON THE PACIFIC COAST GLACIERS

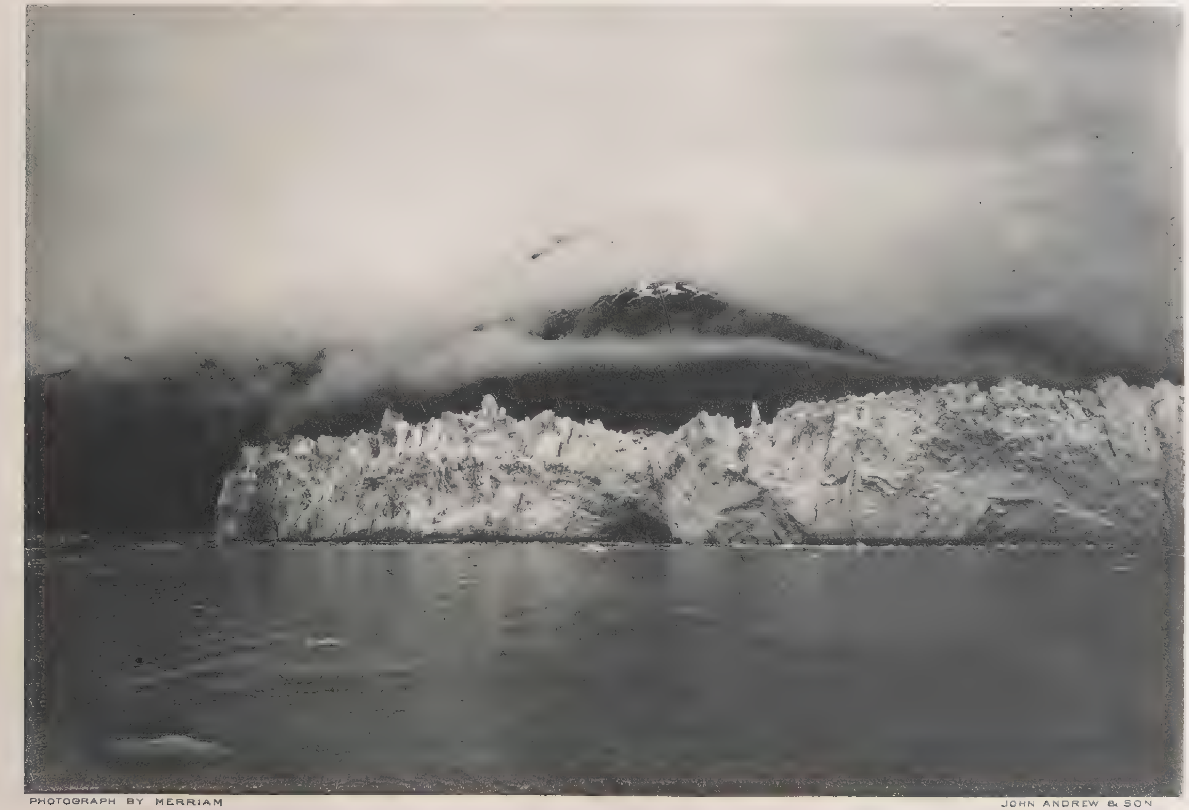
BY JOHN MUIR

THE glaciers that load the mountains of the Pacific Coast form a belt about two thousand miles long, of which the south half is mostly narrow and broken, the north continuous and broad.

On the Sierra Nevada of California between latitudes 36° 30′ and 39° there are sixty-five small glaciers, distributed singly or in groups of three or four on the northern slopes of the highest peaks at an elevation of 11,000 to 12,000 feet above the sea. These slow-flowing, ragged-edged, residual masses, few of which are more than a mile in length or width, are all that is left of the great glaciers which once covered the Range. More than two-thirds of their number lie between latitudes 37° and 38° and form the highest fountains of the San Joaquin, Tuolumne, Merced, and Owens rivers. Mt. Shasta, near the northern boundary of the state, still supports a few shrinking remnants, the largest of which is about two and a half miles long and descends to within 9,000 feet of the level of the sea, the lowest point reached by any glacier in California. Northward along the Cascade Range through Oregon and Washington, groups of larger residual glaciers still exist on all the highest mountains — The Three Sisters, Mounts Jefferson, Hood, St. Helens, Adams, Rainier, Baker and others. From Mount Rainier, the highest of this series of volcanic cones, eight glaciers five to ten miles long radiate, descending to within 3,000 or 4,000 feet of the sea level. On through British Columbia and southeastern Alaska the broad, lofty mountains along the coast are usually laden with ice. The upper branches of nearly all the canyons are occupied by glaciers, which increase in size gradually and descend lower until the region which is highest and snowiest, between latitudes 56° and 61° is reached, where a considerable number discharge fleets of icebergs into the sea. This is the Iceland of Alaska, the region of greatest glacial abundance on the west side of the continent. It is about 500 miles long, 100 broad, and probably includes nine-tenths of the ice on the coast. To the north of latitude 61° the glaciers diminish in size and number to about latitude 62° 30′ or 63°. Beyond this all the way up to the north end of the continent few if any glaciers now exist, the ground being comparatively low and the snowfall light.

HANGING GLACIER, LYNN CANAL.

In the iciest region the smaller glaciers, a mile or two to ten or fifteen miles in length, once tributary to large ones, now fill all the subordinate canyons and upper hollows of the mountains in countless thousands.



PHOTOGRAPH BY MERRIAM JOHN ANDREW & SON

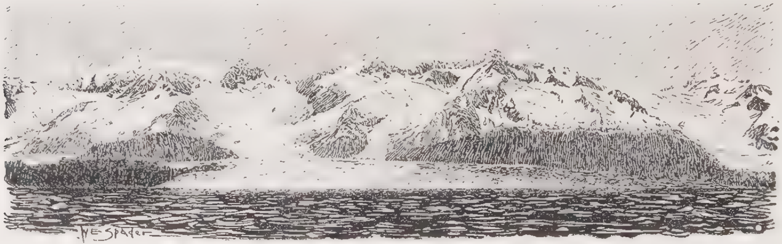
FRONT OF BARRY GLACIER

Of the great glaciers of the second class, flowing down nearly to the sea but not entering it, there are about a hundred, distributed along the coast from the mouth of the Stikine River to Cook Inlet and thence southwestward along the Alaska Peninsula, pouring their majestic crystal floods from far-reaching fountains in the recesses of the peaks, and sweeping down through the forests to the shores of the fiords or of the ocean. The expanded fan-shaped ends of many of them are from two to four miles wide, and all are separated from tide water by mud and gravel flats or terminal moraines—the waste from melting and evaporation equaling or exceeding the supply. The best known of this class are the Baird and Patterson, at the head of fiords opening into Prince Frederick Sound, and the Auk, Eagle, and Davidson glaciers, seen from Lynn Canal; but the largest front the ocean along the Fairweather and St. Elias ranges. The Malaspina Glacier is the largest of all, being about twenty miles long and sixty-five or seventy wide, a vast plateau of ice at the base of the St. Elias Mountains, separated from the sea by a girdle of forested moraines

DAVIDSON GLACIER, LYNN CANAL
FRONT AND SIDE VIEWS.

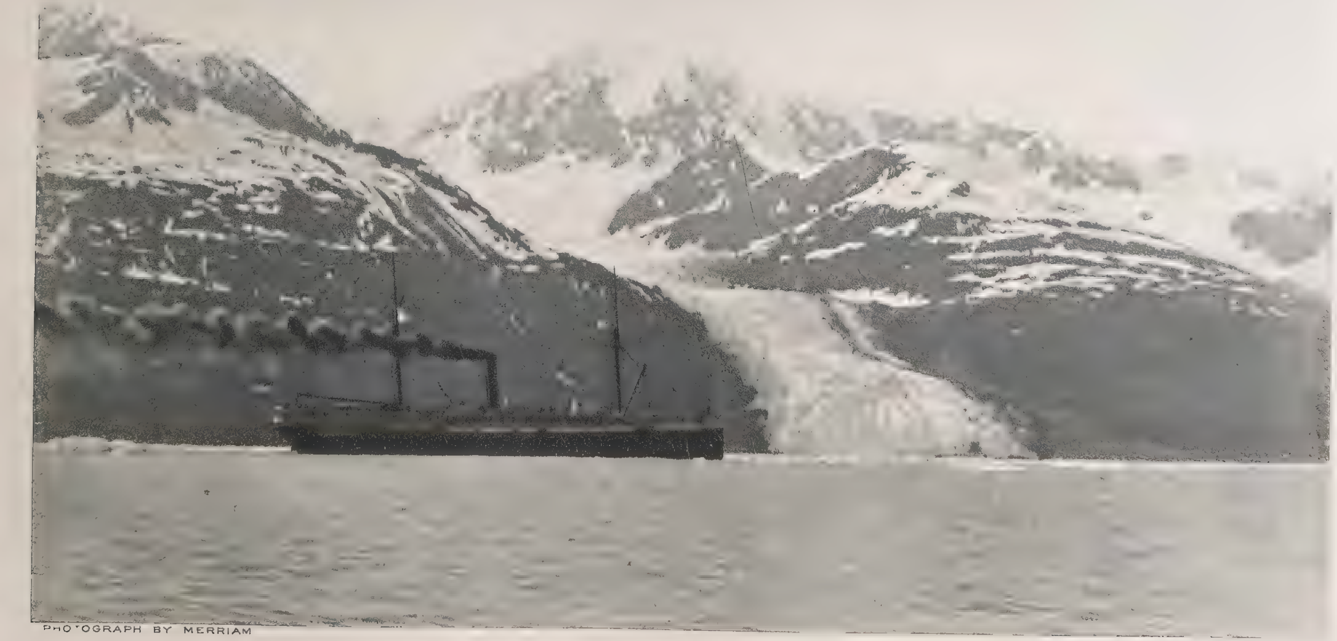
five or six miles wide, except at Icy Cape, where it presents magnificent bluffs of pure ice undermined by the waves. The broad outspread Miles Glacier, near the mouth of Copper River; the Yakutat, the Grand Plateau, Crillon, La Perouse, and many others are of the same type though less extensive. La Perouse, like the Malaspina at Icy Cape, presents to the open ocean grand ice bluffs, which are washed and undermined to some extent at high tide by the waves that occasionally detach berg-like fragments. These fragments are mostly small, however, and are speedily broken up and melted.

BROADSIDE OF MT. ST. ELIAS; MALASPINA GLACIER IN FOREGROUND.



LA PEROUSE GLACIER.

Of complete glaciers of the first class flowing out into deep ocean water and, of course, discharging bergs, I have seen twenty-eight, and there are at least three others, making thirty-one altogether, while several promising fiords in Prince William Sound remain unexplored. At the head of the LeConte Fiord, in latitude 56° 50′, there



PHOTOGRAPH BY MERRIAM

G LBO X CO

THE 'GEORGE W. ELDER' NEAR WELLESLEY GLACIER

is one; about a degree farther north, at the heads of branches of Holkam Bay, there are four; in Taku Inlet there is one; in Glacier Bay there are nine; in Lituya Bay two; in Disenchantment Bay three; and in Prince William Sound eleven. All the fiords into which these glaciers of the first class flow are encumbered, some of them jammed and crowded, with bergs of every conceivable form, which by the most active of the glaciers are given off at intervals of a few minutes with loud thundering roaring that may be heard five or six miles, proclaiming the restless work and motion of these mighty crystal rivers, so widely contrasting with the deathlike stillness and silence of the second class decadent glaciers, though they also, except at their decaying ends, are ceaselessly

TURNER GLACIER, DISENCHANTMENT BAY.

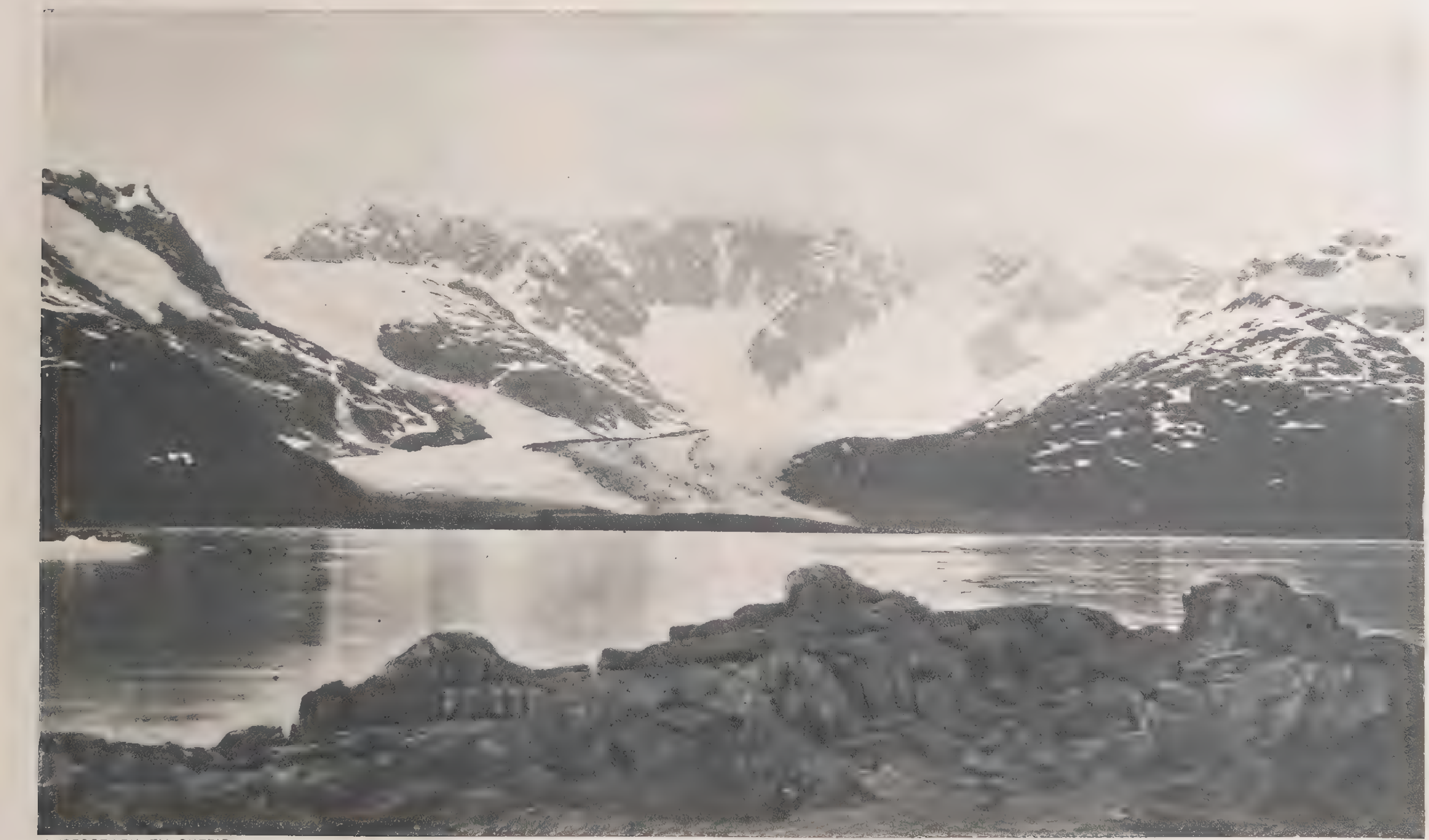
GIANT ICEBERG, GLACIER BAY.
(MUIR AND ANOTHER MAN ON THE TOP; BOAT IN FOREGROUND.)

flowing and grinding, making soil, and completing the sculpture of their basins. As compared with the immense icebergs which adorn and guard the shores of Greenland and the Antarctic Continent those discharged by the Alaska glaciers are small. The very largest I have seen did not exceed a thousand feet in length, few of them three or four hundred feet. And, so far as I have observed, only from Glacier Bay, where the greatest number of bergs are born, do any of them escape to the open ocean. Nearly all are drifted back and forth by wind and tide in the long island-blocked channels until melted.

The southmost of the glaciers which flow into arms of the sea is the Le Conte. It occupies a narrow, forested, picturesque fiord about ten miles north of the mouth of the Stikine River, in latitude 56° 50′, called Hutli or Thunder Bay by the Indians, from the noise made by the rising and falling bergs.

MOUNTAINS ON LYNN CANAL OPPOSITE DAVIDSON GLACIER.

Holkam or Sum Dum Bay, the next icy inlet to the northwestward, is one of the most interesting of all the



PHOTOGRAPH BY CURTIS

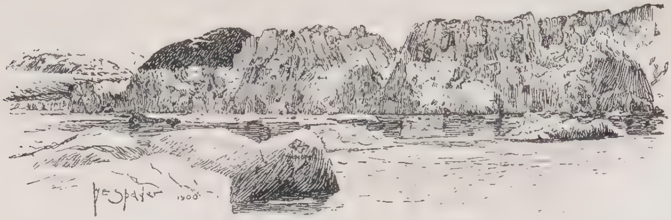
JOHN ANDREW & SON

SERPENTINE GLACIER, HARRIMAN FIORD

Alaska fiords, but the bergs in it are usually far too closely packed to allow a passage for vessels of any size; oftentimes it is difficult to reach its glaciers even in the smallest canoes. About five miles from the mouth the bay divides into two main arms, about twenty and twenty-five miles long, in the farthest recesses of which its four glaciers are hidden. A hundred or more glaciers of the second and third class may be seen along the walls, and about as many snowy cataracts, which with the plunging bergs keep all the fiord in a roar. The scenery in both of the long arms and their side branches is of the wildest description, especially in their upper reaches, where the granite walls, streaked with waterfalls, rise in sheer, massive precipices, like those of Yosemite Valley, to a height of 3,000 and even over 4,000 feet.

The Taku Inlet, usually accessible to the tourist steamers, is about eighteen miles long, and drains many glaciers, great and small. Sailing up the middle of it one may still count some forty-five, descending from a group of high mountains at the head and making a grand display of their crystal wealth. Three of them reach the level of the sea; only one, however, the beautiful Taku Glacier, now discharges bergs. It comes sweeping forward in majestic curves and pours its countless roaring, plunging ice masses into a western branch of the Inlet, next the one occupied by the Taku River. Thus we have here in one view, flowing into the sea side by side, a river of ice and a river of water, both abounding in cascades and rapids, yet infinitely different in their rate of motion and in the songs they sing — a rare object lesson, worth coming far to learn.

Glacier Bay, about fifty miles long, with many deep, high-walled branches, is the iciest of all the inlets which fringe the coast. Both to the north and south of it the great tide-water glaciers are generally less active, less lavishly snow-fed, and of course give birth to fewer bergs; while, as we have seen, the decadent second-class glaciers, with no ice to spare for bergs, reach their greatest size at the base of the St. Elias Range.



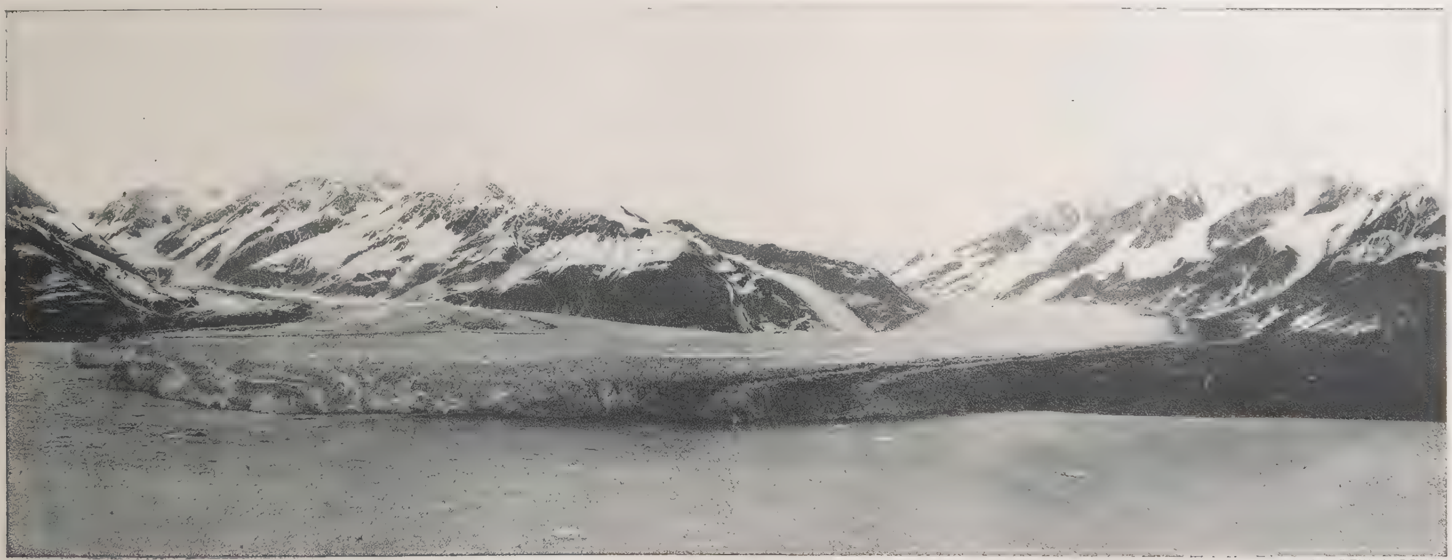
ICE FRONT OF MUIR GLACIER.

Of the nine berg-bearing glaciers in Glacier Bay the Muir is the largest, the main trunk below the confluence of the principal tributaries being about twenty-five miles wide, while the area of its basin can hardly be less than a thousand square miles.

The most active of the three Disenchantment Bay glaciers is the Hubbard, a truly noble glacier. It has two main tributaries pouring majestic floods into the broad, widely crevassed trunk, and it furnishes most of the bergs which fill the upper end of the bay from shore to shore.

The grandest and most active of the ten Prince William Sound glaciers visited by the Harriman Expedition, so far as I saw them, are the Columbia, Harvard, and Yale, though the Barry, Serpentine, Harriman and Surprise—the last three discovered by the expedition — are also superb and imposing; while the cascading glaciers in Port Wells

SURPRISE GLACIER, HARRIMAN FIORD.

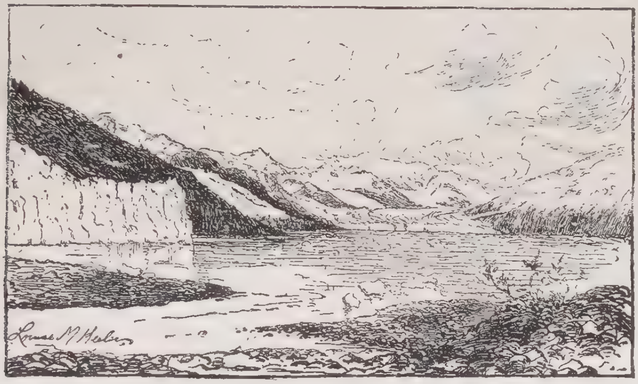


PHOTOGRAPH BY GILBERT

JOHN ANDREW & SON

HUBBARD GLACIER, DISENCHANTMENT BAY

Fiord named for Wellesley, Vassar, Bryn Mawr, Smith, and Radcliffe colleges are the finest and wildest of their kind, looking, as they come bounding down a smooth mountain side through the midst of lush flowery gardens and goat pastures, like tremendous leaping, dancing cataracts in prime of flood.



COLLEGE FIORD, PRINCE WILLIAM SOUND.
BRYN MAWR GLACIER ON LEFT; HARVARD IN DISTANCE.

None of the glaciers south of Icy Strait were visited by the expedition, though telling glimpses of them were obtained in the bright weather as we sailed through the enchanting Alexander Archipelago, the icy canyons opening and closing as we advanced and showing their wealth like the quickly turned leaves of a picture-book. In Glacier Bay we remained nearly a week, so that we were able to note the changes which had taken place since my first visit in the fall of 1879. I then sailed around the bay, exploring all its branches and sketching the glaciers which occupied them, sailing up to their discharging fronts and landing on those which were not rendered inaccessible by the freezing together of their crowded bergs. Then there were only six berg-discharging glaciers in the bay; now there are nine, the three new ones being formed by one of the tributaries of the Hugh Miller and two of the

Grand Pacific, separated from the main glaciers and rendered independent by the recession of the trunks beyond their points of confluence. The Hugh Miller and Muir have receded about two miles in the last twenty years, the Grand Pacific about four, and the Geikie, Rendu and Carrol perhaps from seven to ten miles. By the recession of the Grand Pacific and corresponding extension of Reid Inlet an island two and a half or three miles long, and over a thousand feet high, has been added to the landscape. Only the end of this island was visible in 1879. New islands have been born in some of the other fiords also, and some still enveloped in the glaciers show only their heads as they bide their time to take their places in the young landscape. Here, then, we have the work of glacial earth-sculpture going on before our eyes, teaching lessons so plain that he who runs may read. Evidently all the glaciers hereabouts were no great time ago united, and with the multitude of glaciers which loaded the mountains to the south, once formed a grand continuous ice-sheet that flowed over all the island region of the coast and extended at least as far down as the Strait of Juan de Fuca. All the islands of the Alexander Archipelago, great and small, as well as the headlands and promontories of the mainland, have a smooth, over-rubbed appearance, generally free from angles except where modified by the after-action of local glaciers, and they all have the form of greatest strength with reference to their physical structure and the action of an oversweeping ice sheet. The network of so called canals, passages, straits, chan-

IN MUIR INLET, GLACIER BAY.

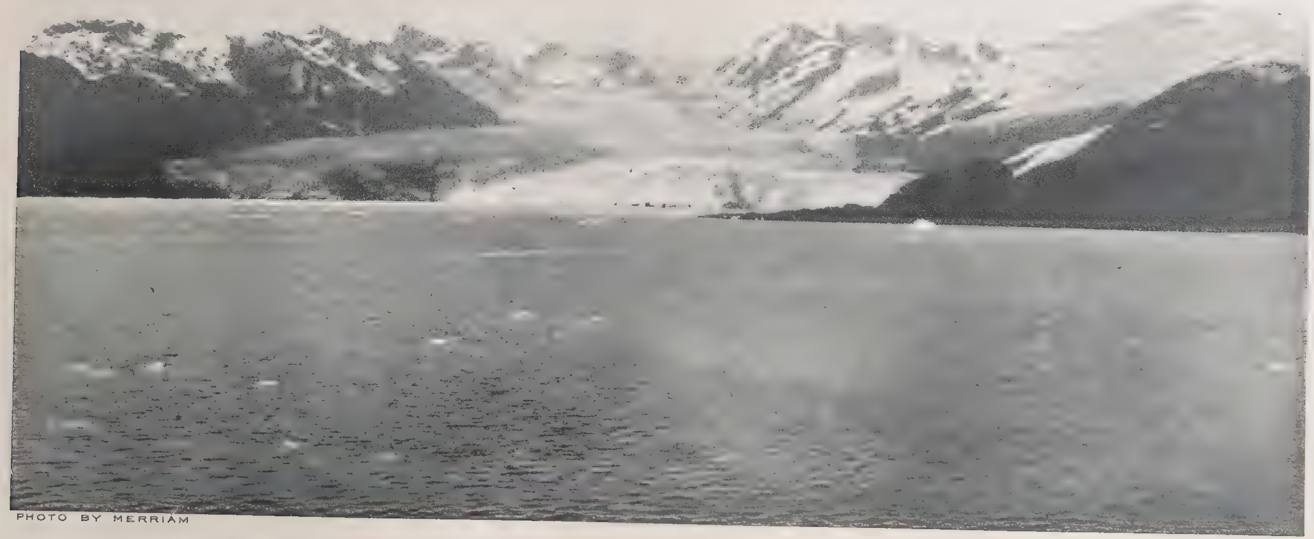


PHOTO BY MERRIAM

YALE GLACIER, COLLEGE FIORD
JUNE 1899

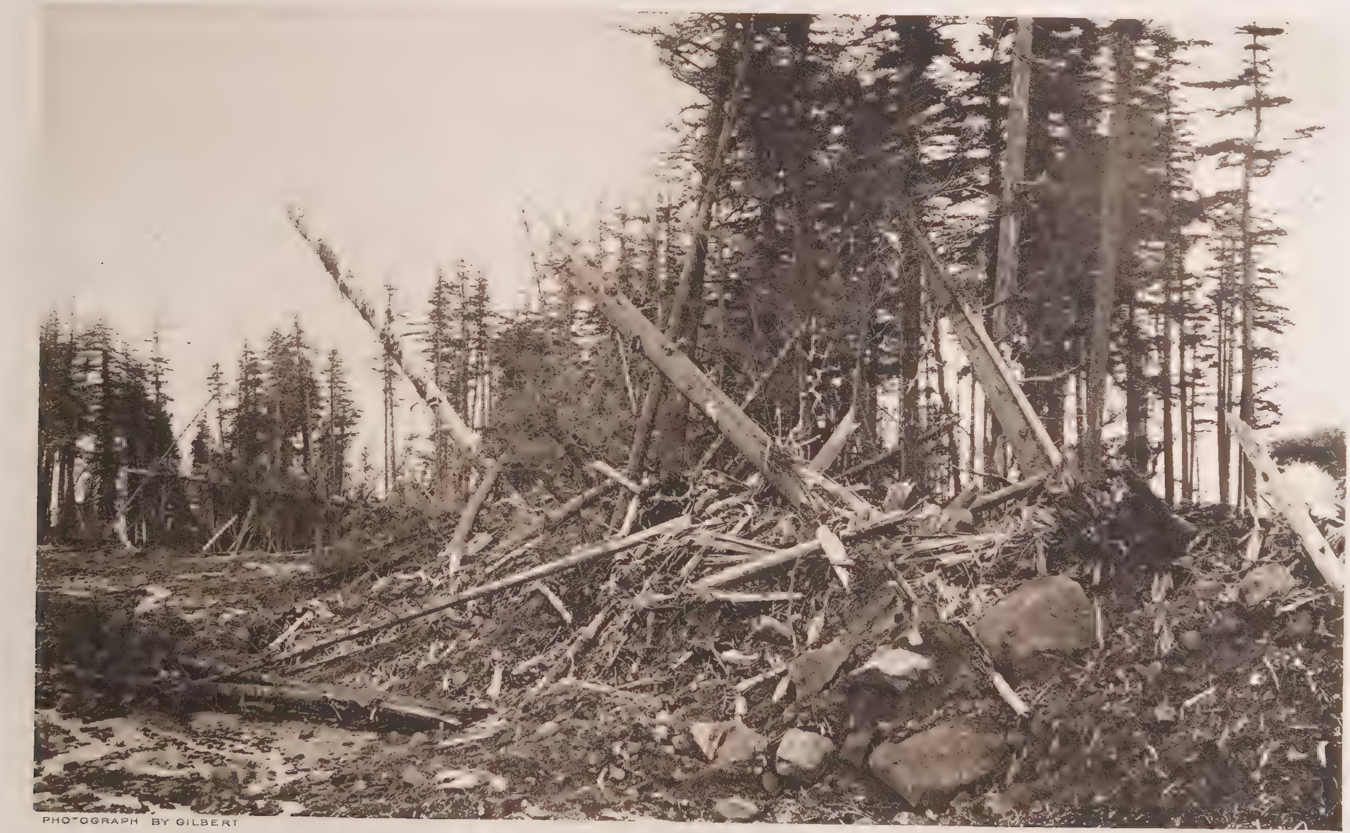
nels, sounds, fiords and so on, between the islands manifest in their forms and trends and general characteristics the same subordination to the grinding action of a continuous ice-sheet, being simply the portions of the margin of the continent eroded below the sea level and therefore covered with the ocean waters, which flowed into them as the ice was melted out. And, as we have seen, this action is still going on and new islands and new channels are being added to the famous archipelago. The steamer trip to the fronts of the glaciers of Glacier Bay is now from two to eight or ten miles longer than it was only twenty years ago. That the domain of the sea is being extended over the land by the wearing away of its shores is well known, but in this region the coast rocks have been so short a time exposed to wave action that the more resistant of them are as yet scarcely at all wasted. Even as far south as Victoria the superficial glacial scoring and polish may still be seen on the hardest of the harbor rocks below the tide-line. The extension hereabouts of the sea by its own action in post-glacial time is probably less than a millionth part as much as that effected by recent glacial action.

LARGE ROCK CARRIED FROM DISTANT MOUNTAINS TO THE SEA BY A GLACIER.

On our way up the coast to Yakutat the majestic Fairweather Mountains we had so often admired from the Glacier Bay side were buried in clouds, but the broad outspread lower portions of the glaciers were clearly displayed beneath the clouds up to an elevation of about 2,000 feet. All of them are cut off from the sea by enormous moraine deposits, except a mile or two of the front of La Perouse Glacier which presents a bold crystal wall to the waves at high tide. Not a single iceberg was seen. That there should be no discharge from the sea side of the Fairweather Range and so lavish a discharge from the other is not so surprising, however, when we consider that the area of the western slope and its snowfields is far less extensive, while at the same time the waste from the sea winds and from sunshine, on account of the direction of the trend of the Range, is greater. A landing was made near the west end of the La Perouse ice-wall to examine a forest, part of which had been overwhelmed by an advance of the glacier; another part was falling by the undermining action of a glacial stream. Some of the Taylor Bay and Prince William Sound forests have been destroyed in the same way, whether simultaneously or not I am unable to say. When I visited the Brady Glacier in the summer of 1880 I found thousands of trees, many of them more than a century old, which had been uprooted and crushed like weeds before the plow, showing that this glacier, instead of receding, had risen higher and advanced its front beyond the position where it stood when Vancouver explored the bay in 1794. The trees lining the banks were barked and scarred, very effectively blazing a high ice-mark for miles. The surface of the glacier had already fallen fifteen or twenty feet below its highest flood-level, though the front had receded but little; its huge ice-cliffs on the east end were still towering portentously above the spruces that stood a few feet in front of them. The buried forests of Glacier Bay record still greater and more impressive changes in the recession and advance of grand ice floods and water floods.

In our northward journey dark clouds hid the mountains until we reached Yakutat. Then the heavens opened and St. Elias, gloriously arrayed, bade us welcome, while the heaving, plunging bergs roared and thundered.

Here we spent immortal days, studying, gazing, sailing



PHOTOGRAPH BY GILBERT

JOHN ANDREW & SON

TREES UPSET BY LA PEROUSE GLACIER

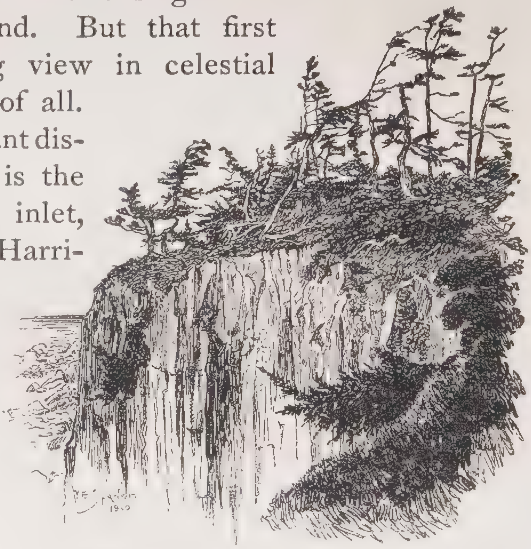
the blue waters, climbing the hills and glaciers and warm, flowery islands, considering the abounding life — everybody naturally enthusiastic and busy and happy to the heart. The scenery about the head of Disenchantment Bay is gloriously wild and sublime — majestic mountains and glaciers, barren moraines, bloom-covered islands amid icy, swirling waters, enlivened by screaming gulls, hair seals, and roaring bergs. On the other hand, the beauty of the southern extension of the bay is tranquil and restful and perfectly enchanting. Its shores, especially on the east side, are flowery and finely sculptured, and the mountains, of moderate height, are charmingly combined and reflected in the quiet waters. A comparatively short time ago it was a fresh-water lake about 150 feet above the tide — until it was lowered and opened to the sea by the retreat of the Hubbard Glacier. The front of the great Hubbard Glacier is about five miles wide, and bergs are discharged from the west half of it. The other half has receded from the bay and is covered with moraines, sparsely planted here and there with epilobium and dwarf willows, where a multitude of gulls breed. The Turner Glacier, a short distance to the west of the Hubbard, is much smaller and sends off but few bergs. The Nunatak Glacier discharges still fewer, and at the present rate of waste will soon die away into the second class, like its neighbor, the Hidden Glacier.

NUNATAK GLACIER.

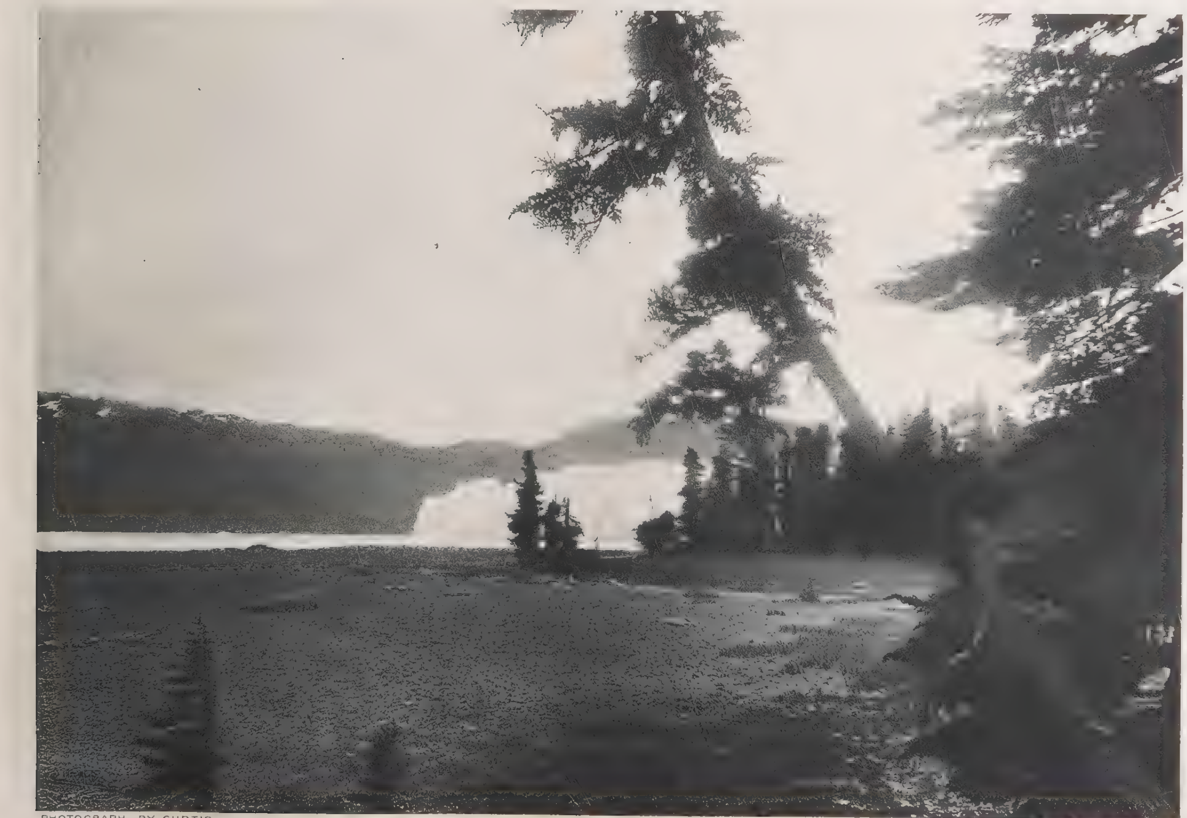
For an hour or two before we left Yakutat we enjoyed glorious views of Malaspina's crystal prairie, and of St.

Elias and his noble compeers, then down came clouds and fog, leaving only a dim little circle of water about us. But just as we entered the famous Prince William Sound, that I had so long hoped to see, the sky cleared, disclosing to the westward one of the richest, most glorious mountain landscapes I ever beheld — peak over peak dipping deep in the sky, a thousand of them, icy and shining, rising higher, higher, beyond and yet beyond one another, burning bright in the afternoon light, purple cloud-bars above them, purple shadows in the hollows, and great breadths of sun-spangled, ice-dotted waters in front. The nightless days circled away while we gazed and studied, sailing among the islands, exploring the long fiords, climbing moraines and glaciers and hills clad in blooming heather — grandeur and beauty in a thousand forms awaiting us at every turn in this bright and spacious wonderland. But that first broad, far-reaching view in celestial light was the best of all.

The most important discovery made here is the magnificent new inlet, rightly named the Harriman Fiord. It is full of glaciers of every description, waterfalls, gardens and grand old forests—nature's best and choicest alpine treasures purely wild—a place after my own heart. Here we camped in the only pure forest of mountain hemlock I ever saw, the most beautiful of evergreens, growing at sea-level, some of the trees over



HEMLOCK CLIFF, HARRIMAN FIORD.



PHOTOGRAPH BY CURTIS

JOHN ANDREW & SON

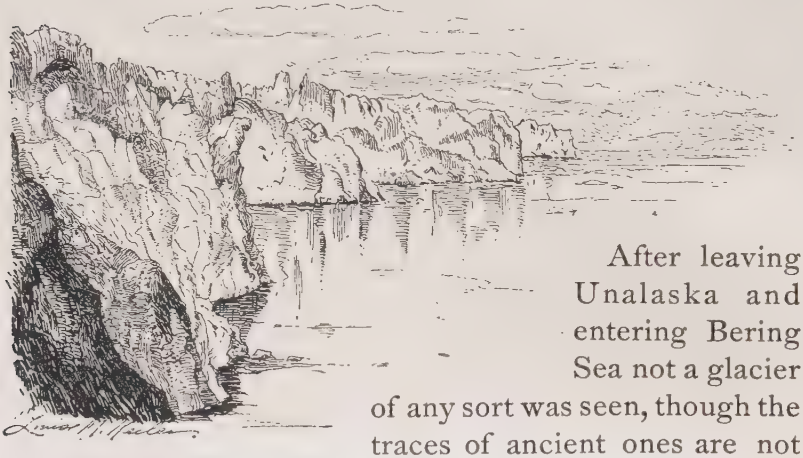
WEST FRONT OF COLUMBIA GLACIER

three feet in diameter and nearly a hundred feet high. This is the same species (*Tsuga mertensiana* Sarg.) which grows on the High Sierra of California near the timber line.

COLUMBIA GLACIER, PRINCE WILLIAM SOUND.

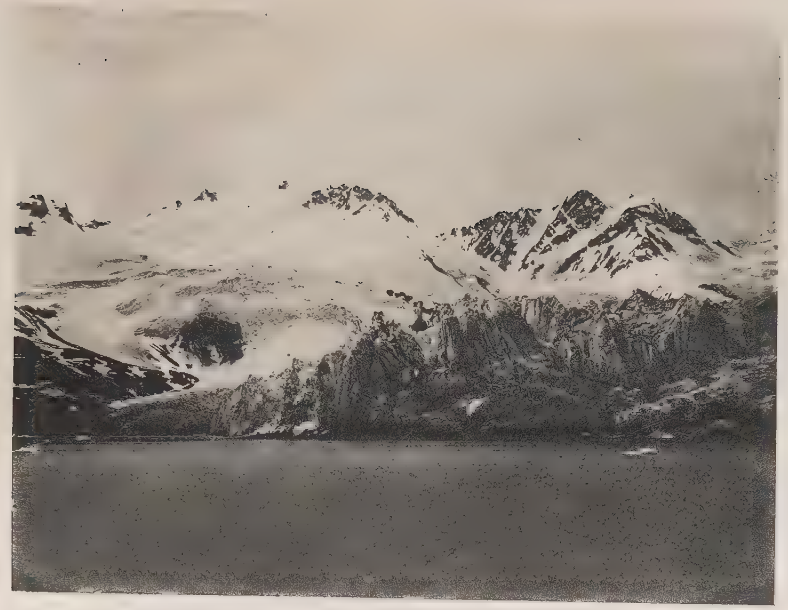
Every feature of Prince William Sound shows that it was once filled by a grand glacier; but, with the exception of its complicated network of fiords, it has long been open to the sea — probably a thousand years or more. On the north shore I found a Sitka spruce 380 years old, and the ruins on the forest floor bear witness to several generations of these trees. And on the shore of the Harriman Fiord, well up toward the head, where the ice must have lingered long after the main central glacier had vanished, I counted 325 annual rings on a hemlock stump only nine inches in diameter.

From this glorious sound we sailed to Cook Inlet, from which most of the great glaciers that once loaded its mountains have vanished; thence to flowery, grassy Kadiak and Unalaska, gaining splendid general views of the wonderful chain of volcanoes extending along the west shore of Cook Inlet, the Alaska Peninsula, and the Aleutian Islands. Several of the great white cones were sending up plumes of smoke or steam 200 or 300 feet high and sending down broad glaciers nearly to the shore line.

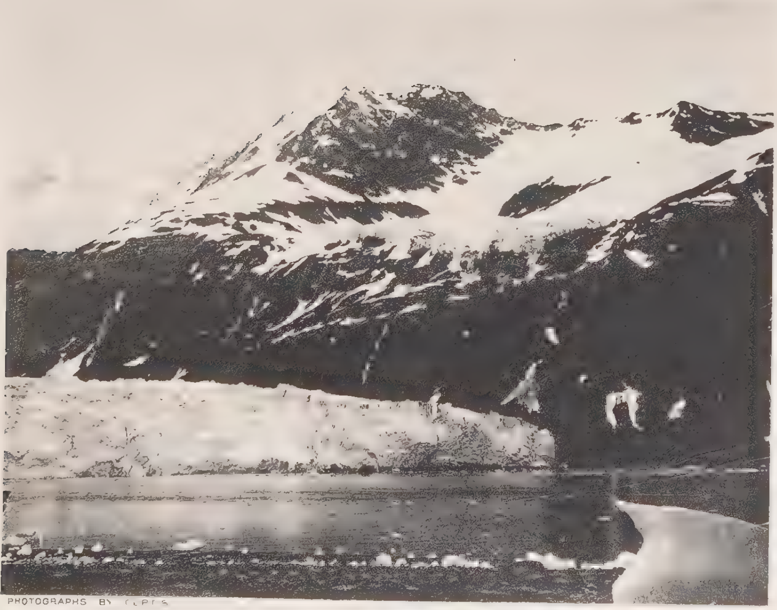


ICE WALL OF COLUMBIA GLACIER.

After leaving Unalaska and entering Bering Sea not a glacier of any sort was seen, though the traces of ancient ones are not rare, especially in the fiords and low mountain ranges. Plover Bay on the Siberian Coast, in which the Expedition made a short stay, and which I explored in 1881, is a well characterized glacier fiord. Its walls rise to an average height of about 2,000 feet and present a severely desolate and bedraggled appearance, owing to the crumbling condition of the rocks, which in most places are being rapidly disintegrated, loading the slopes with loose detritus wherever the angle is low enough to allow it to rest. But on the most resisting portions I discovered rounded glaciated surfaces, grooved, scratched and polished, from near the sea level up to a height of a thousand feet or more. And in high, spacious cirques I found well formed unwasted moraines made up of concentric masses shoved together, indicating that the glaciers to which they belonged receded with changes of level and rate of de-



HARRIMAN GLACIER
SOUTH CORNER



PHOTOGRAPHS BY CURTIS

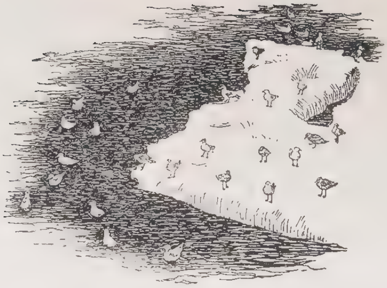
HARRIMAN GLACIER
NORTH CORNER

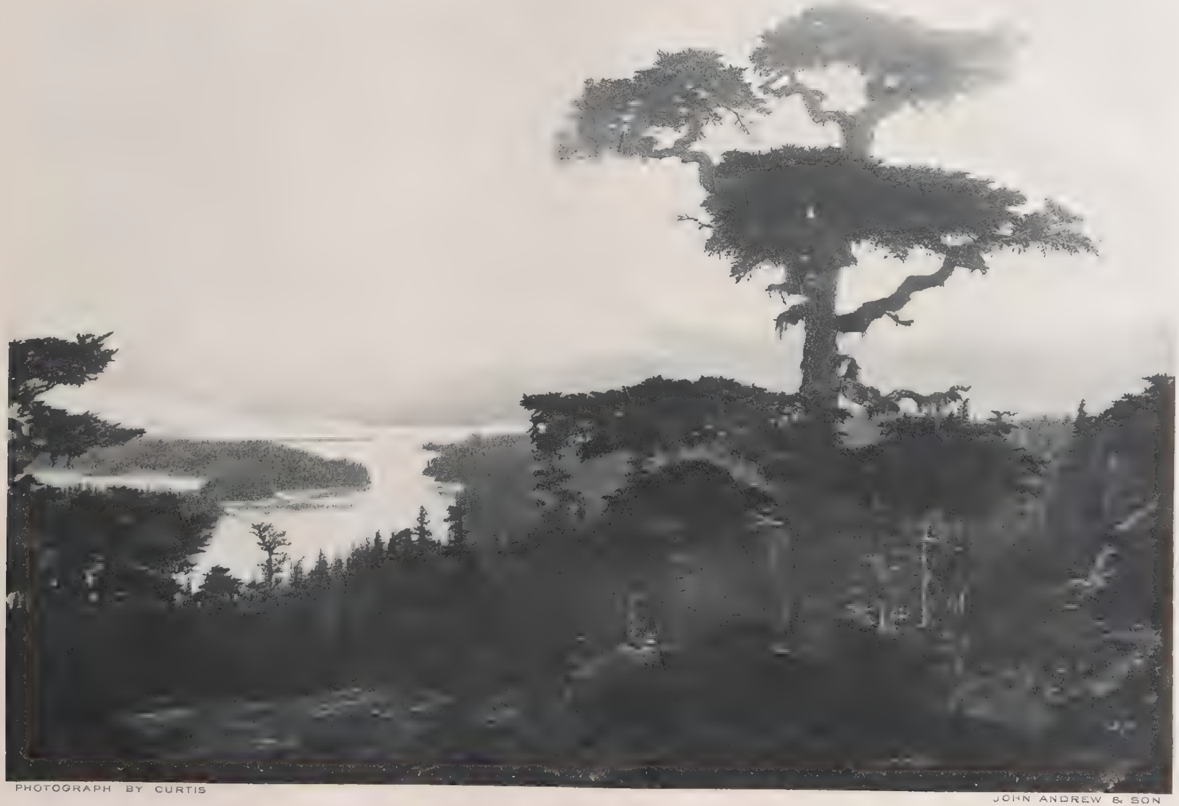
cadence in accordance with conditions of snowfall, temperature and so on, like those of lower latitudes. When the main glacier which filled the fiord was in its prime it was about thirty miles long and five to six wide, with five main tributaries, which, as the trunk melted, became separate glaciers, and these melting in turn left many smaller tributaries ranging from less than a mile to several miles in length. These, also, as far as I have seen, have vanished, though possibly some wasting remnants may still exist in the snowiest recesses of the mountains.

From Port Clarence we turned back, homeward bound and Heaven-favored, for all the mountains between Prince William Sound and Cross Sound, veiled in clouds on the way up, were now revealed to us in all their glory. The sky was pure azure, the sea calm, and the mountains in their robes of ice and light towered in awful majesty.

In passing the Malaspina Glacier we ran in for a nearer view of the ice bluffs at Icy Cape, then skirted the moraine- and forest-covered border, gaining glorious views of the immense ice-field and its tributaries pouring in from their sublime sun-beaten fountains.

The sail down the coast from St. Elias along the magnificent Fairweather Range, when every mountain stood transfigured in divine light, was the crowning grace and glory of the trip and must be immortal in the remembrance of every soul of us.





PHOTOGRAPH BY CURTIS

JOHN ANDREW & SON

COLUMBIA GLACIER, FROM HEATHER ISLAND

THE NATIVES OF THE ALASKA COAST REGION

BY GEORGE BIRD GRINNELL

THE COASTWISE INDIANS

HALIBUT HOOK.

LL along the southeastern coast of Alaska, from Port Tongass to Kachemak Bay, are scattered the villages of the Alaska Indians. They are a hardy race. Living on the shore, bold mariners and sea hunters, they are also mountaineers, familiar with the towering peaks, the dreadful cliffs, and the mighty glaciers of the iron-bound coast. In their frail canoes they venture far to sea in pursuit of the fur-seal, the sea-otter, and the whale; or thread their perilous ways among crowding ice-bergs to capture the hair seal. In spring, when the coat of the white goat is long and shaggy, they clamber skyward, first through the forests, and then over the broken rocks, until they reach his feeding ground,

NATIVE WOMEN AND CHILDREN, ALERT BAY, BRITISH COLUMBIA.

and there kill him for his flesh, and for his fleece, which they weave into blankets. High up among the rocks, too, they trap the marmots and ground squirrels whose skins sewn together serve them for robes.

The changing seasons give them their seal, their salmon, and their berries; their fish, their fowl, and their deer — the latter driven down from the high mountains by the deep snows of winter, or in summer forced by the flies out of the forests to feed along the beach. They fish, they hunt, they feast, they dance; and, until the white man came and changed all their life, they lived well.

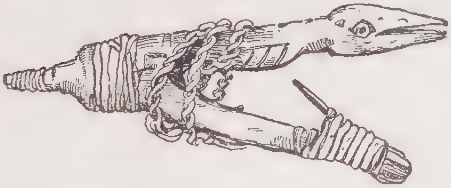
Although belonging to three different linguistic families, Koluschan, Skittagetan, and Chimmesyan, their environment is essentially the same, and this means that their ways of life do not markedly differ. Although they are now greatly changed from what they were when the Russians first came to Alaska, they still preserve not a few of their ancient customs and beliefs.

TLINKIT WAND, USED IN DANCING.

Unlike the Indian tribes of our Western States, most of which have treaties with the government by which they are supported wholly or in part, these dwellers along the Alaska coast depend for their subsistence wholly on their own exertions and draw their food largely from the sea. They are essentially a race of fishermen. Their main dependence is the salmon, of which enormous numbers are caught, but they also secure an abundance of halibut, and, at certain seasons of the year, of other fish. The introduction of the products of civilization has done away with the use of the old-time fish-line, which was made of knotted lengths of the stem of the giant kelp, but they still use hooks of primitive form, though now the unwieldy implements are tipped with iron, instead of with bone as in ancient days. Not only do they procure their animal food largely from the sea, but it yields them as well two or three sorts of seaweed, one of which is eaten fresh, while another is dried, pressed into cakes, and used as an ingredient of soups and stews.

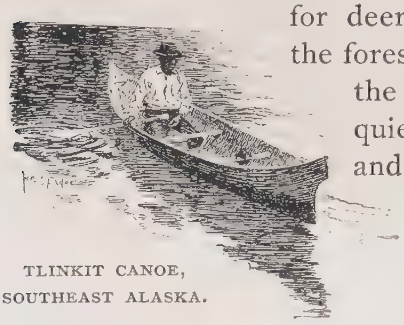
TLINKIT DANCE RATTLE.

The salmon are captured in a variety of ways; by means of spears and gaffs, but also very largely in traps. These commonly consist of a barrier extending across the stream, but with an opening through which the salmon can pass. Above the opening is a trap from which the fish cannot escape. Sometimes merely a close barrier is built. The instinct of the salmon, when seeking their spawning beds, teaches them to always push onward toward the head of the stream; they never turn back. And if a barrier is built which prevents their working their way up against the current, they will remain below it, always trying to force their way through, until they die. When captured in large numbers, the salmon are dressed and hung on the poles of the drying scaffold, exposed to sun and wind, until at last they are dry enough


TLINKIT HALIBUT HOOK.

to be packed away. In this condition they will keep indefinitely.

Besides the fish that they catch, the Indians do much hunting in the mountains and on the islands along the coast. Deer are abundant, and great numbers of them are killed at all seasons of the year. In winter, the native steals along in his canoe, close to the shore, looking for deer that have ventured out of the forest to feed on the seaweed and the grass along the beach. Very quietly he slips up to the game, and when near enough, kills it by a shot from his rifle. Many of the men are good hunters and do not fear to attack the great brown Sitka bear, which is larger than the grizzly and quite as much disposed to fight.


TLINKIT CANOE,
SOUTHEAST ALASKA.

On the Alaska coast the water is the common highway. Away from the settlements there are no roads nor trails, for the many wide inlets and rivers which run back into the mountains at frequent intervals prevent land travel up and down the coast. The Indians make all their journeys by canoes, and in the handling of these they are most expert. A child is scarcely out of its cradle before a tiny paddle is thrust into its fist. Infants not more than three or four years old may be seen paddling for hours at a stretch. Thus trained from childhood, these Indians are enormously strong in their arms and hands, and can accomplish a wonderful amount of work of this kind without showing fatigue. The upper part of the body is much more robust than in the Indians of the Plains.

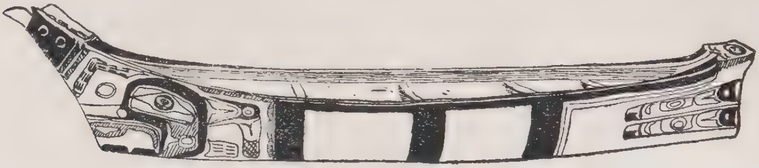
Different types of canoes are in use in different localities. All the sea travel is done by means of paddles, but in ascending rivers where the current is too swift to be overcome by paddling, poles are used. An Indian, as he drives his canoe upstream against the turbulent current, keeps close to the bank and takes advantage of all the eddies, pushing along quietly until he has almost reached the swiftest water; then fixing his pole firmly against the bottom he leans back against it and sends the light shell darting upstream. Before its way has ceased he has again secured a good hold on the bottom, and no matter how furious the rapid, the little craft, held perfectly straight, moves steadily forward until the quiet water above has been reached, and the pole is laid aside for the paddle.

HUNYA SEAL HUNTERS, GLACIER BAY.

These canoes are always made from a single piece of timber. In southern Alaska and British Columbia where the white cedar grows, this is the favorite wood, and from its trunks canoes are hollowed out which are sometimes eighty feet in length. Such were the great war canoes in which the fierce Haida and other peoples of the north used to make their war journeys to harry their enemies to the southward, to plunder their villages, and to make captive their people, whom they brought away to their island home as slaves. These great war canoes were very wide and so deep that a man standing in the bottom of one could not see over its sides.

In making the canoe, the log is first roughly shaped and hollowed out by fire, water or moist earth being used to control the burning. After this has progressed as far as is safe, a chisel formed of a piece of steel fixed in a wooden handle, is used to chip off the wood in little flakes, both from the outside and inside until the shell is reduced to the proper thickness.

After the canoe is shaped, the gunwales are slightly sprung apart, by wetting with water brought almost to the boiling point by means of heated stones, so as to give greater flare to the sides, and in the larger canoes are held in position by braces or narrow strips of timber stretching across the boat, and sewed or lashed to the gunwales by cedar twigs made flexible by steaming. Smaller canoes need no such braces. The Indians have no models and the eye is the only guide in making the canoe, but the lines are always correct and always graceful.

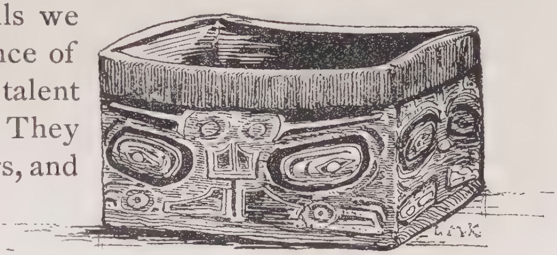


CARVING OF TLINKIT CANOE.

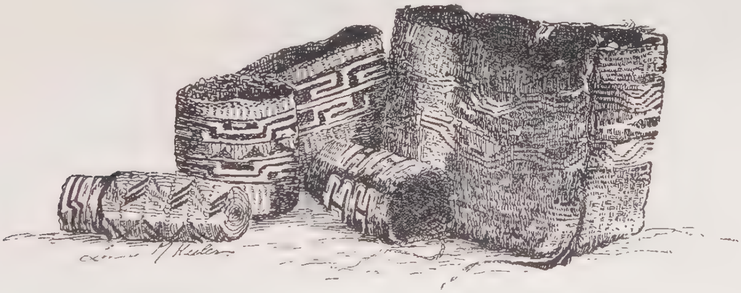
Paddles are variously made of spruce, hemlock, and sometimes of maple brought from the south. They are from four to five feet long, and vary in shape of blade and handle with the different tribes. Some have a cross piece for a handle ; others are straight. Usually the blade is about four inches wide and terminates in a long, sharp point. Sometimes the blades are ornamented with carvings.

The canoes are never left in the water. When brought to shore the occupant steps out on the beach and lifts or drags the canoe up above high-water mark. This must be done, for a very little battering by the sea, or a knock or two on the beach, might split and ruin the boat. When on the beach, exposed to the air and sun, it is always covered by cloths or skins which are kept wet, for if the wood of the canoe should become dry and heated it would warp and crack.

The canoes used by the Indians of Koluschan stock are not commonly carved as are those of the Indians of northern British Columbia, but this is not because these Indians are not skillful carvers. In the totem poles and in the ornamentation of their houses and of many of their implements and utensils we have good evidence of the high artistic talent of these Indians. They are expert weavers, and make blankets from yarn that is twisted from the fleece of the white goat. They also make mats of great beauty, hats from the inner bark of the cedar, and baskets from cedar bark or from roots, which are absolutely water tight. In ancient times they cooked their food in such baskets, boiling the meat or fish in the water which they held, made hot by the introduction of red-hot stones. Ropes and lines are twisted from the bark of the cedar and are still used for many purposes. Their baskets, oil boxes, ceremonial blankets and clothing are, as is



TLINKIT BOX, CARVED AND PAINTED.

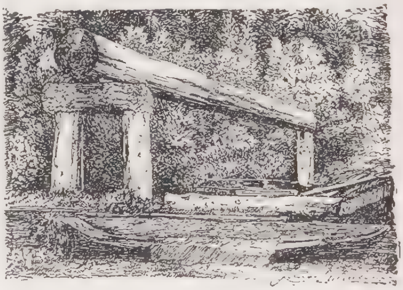


TLINKIT BASKETS.

well known, beautifully ornamented, and they carve elaborately in wood and stone.

TLINKIT CARVING REPRESENTING BEAVER.

Like other Indians more to the southward, those in Alaska are great respecters of wealth. The rank of any family depends rather on the accumulation of riches and the subsequent giving them away by its head, than on bravery or success in war or in hunting. The highest ambition of these Indians is to acquire property in order that they may give it away again, and wealth so evidenced seems to form among them the standard of rank. He who gives away most is the greatest chief, and at subsequent 'potlatches,' or occasions for presenting gifts, he receives a present proportionate to the amount of his own gift. Therefore, when an Indian has accumulated more or less money or other property, he is likely to purchase great quantities of food, calico, and blankets, and then to invite all his friends up and down the coast to a potlatch. In old times, the feast consisted of boiled deer meat and salmon, with unlimited crackers, tea, sugar, and molasses. Each guest has all the food he can eat, and each one is given so many yards of calico. The important visitors receive blankets, and part of the blankets are tossed from the housetop into a crowd of young men,



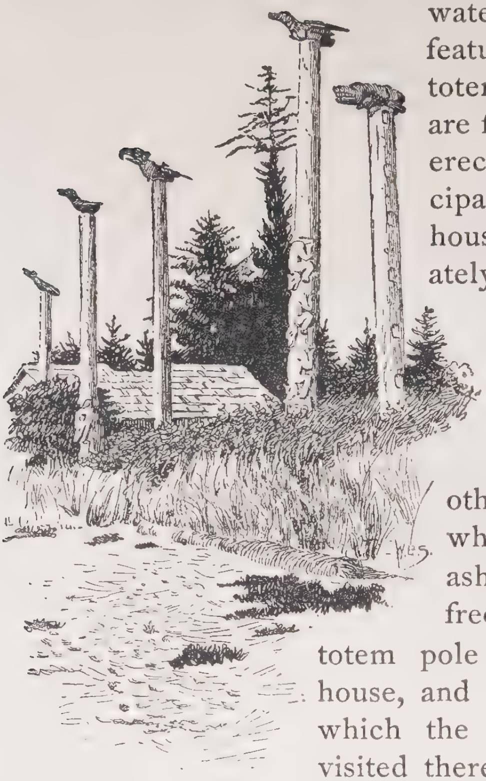
PART OF HOUSE FRAME, ALERT BAY, BRITISH COLUMBIA.

and scrambled for by them. The festal occasion may last for several days or a week, and when it is at an end the Indians go their several ways, leaving the giver of the potlatch a poor man. When the next one takes place, however, he recovers a portion of his wealth, and after a few more he is better off than ever — for the time being. Canoes may be given away at these feasts, or guns and ammunition, and the greater the gift the more is due the giver, when those who have been his guests themselves give potlatches.

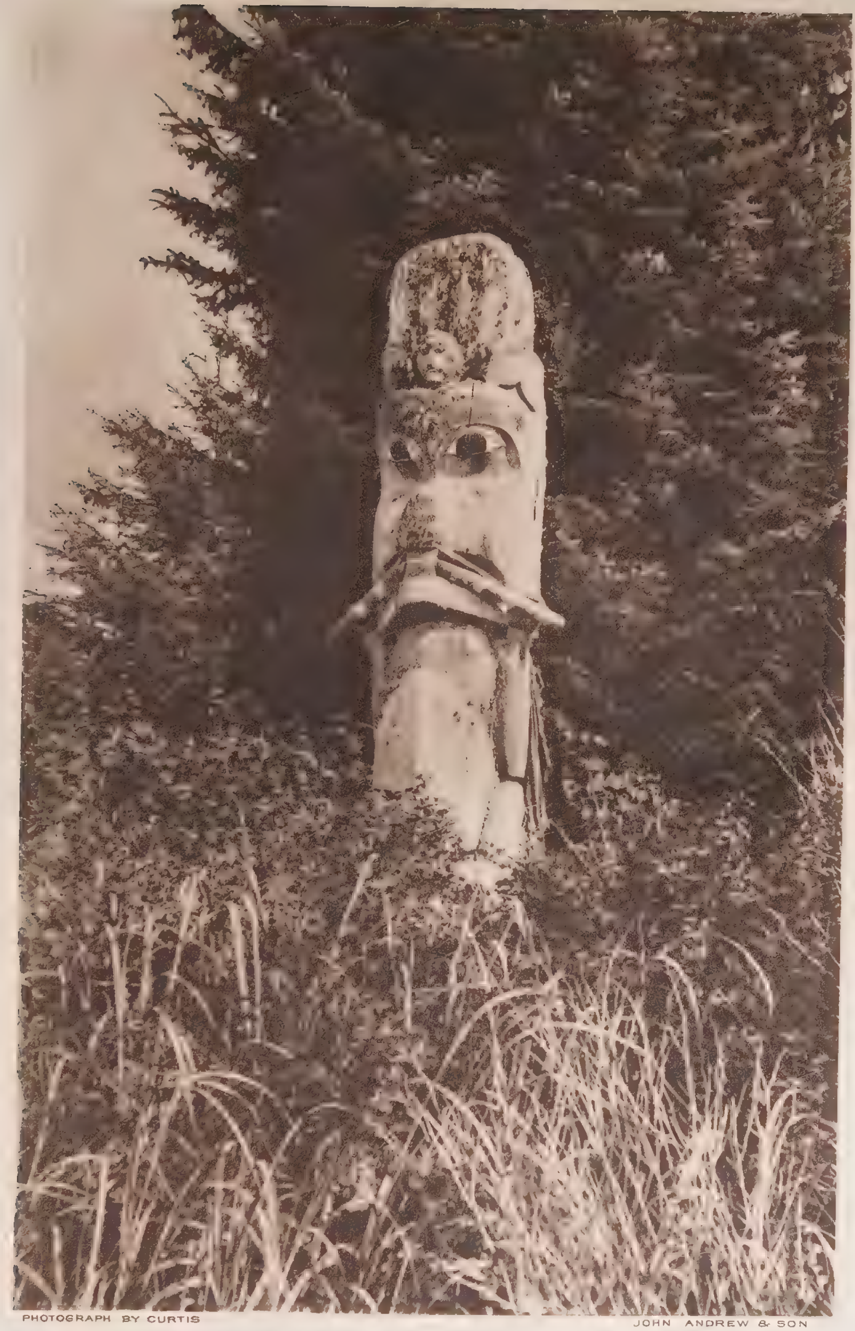
DESERTED VILLAGE, CAPE FOX.

The villages occupied by these Indians are permanent. The houses are made of rough planks, split or hewn from large trees — to the southward the cedar and to the northward the spruce — and roofed with shingles split from the trees, though in olden times the roofs were more commonly of planks similar to those used in the construction of the walls. These houses, which are often forty feet square, and sometimes even larger, were usually without floors in old times, though the bed places which run around the walls were raised a foot or two from the ground, and were formed of planks hewn smooth by a slow process of chipping, which must have been very laborious. Often gravel is brought into the house, and the floor covered with it, so that even in wet weather it does not become muddy. The fire is built on the ground in the middle of the room, and the smoke escapes through narrow openings in the roof, for usually the planks do not quite meet at the ridgepole, so that the sky may easily be seen. Such houses are occupied by a number of families, usually related in some degree.

Such a village may consist of ten, fifteen, or twenty large houses placed side by side on the bank just above the beach, and not more than two or three feet above high-water mark. The striking feature of the village is the totem poles, some of which are fifty or sixty feet high, erected by chiefs or principal men in front of their houses. They are elaborately carved with figures of men, frogs, birds, and various mammals. Some of them indicate the descent of the man who erected them; others are burial trees in which are deposited the ashes of the dead. Not infrequently more than one totem pole is erected before a house, and in a deserted village which the Harriman expedition visited there were nineteen poles, while the houses numbered only fourteen. The illustrations give a very clear idea of the character of these poles. One represented a succession of bears, one above the other, while the pole was sur-



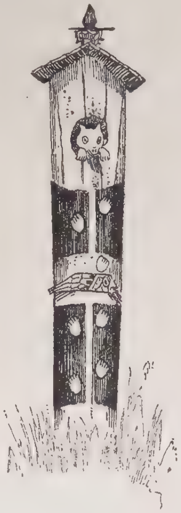
TOTEM POLES, CAPE FOX.



PHOTOGRAPH BY CURTIS JOHN ANDREW & SON

BEAVER TOTEM, DESERTED VILLAGE

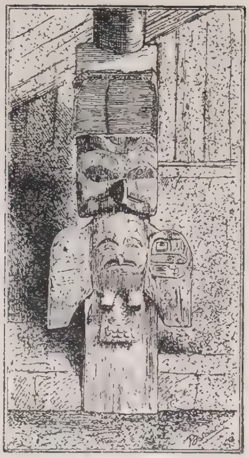
mounted by the carved figure of an eagle; this was the tallest pole in the village. Another, which from its appearance seemed to have been standing for very many years — for it was gray with weather, and long strings of lichen hung down from it — consisted of the stout upright twenty feet in height, surmounted by an almost equally stout cross pole, on either end of which sat a large carved toad. One much taller than this was surmounted by a beaver holding a stick across his jaws. Another, not very tall, had near the top a large hole from which a bear's head and shoulders protruded. Representations of the tracks of the bear were painted on the pole from the ground up to the hole from which he looked. The topmost figure on most of these totem poles was a bird, presumably an eagle, but in one or two cases this figure was a man wearing a conical hat. The frog, the bear, the eagle, and the killer whale were frequently represented on the posts, and on one very large pole were carved the figures of three enormous halibut, one above the other.


BEAR TOTEM POLE, CAPE FOX.

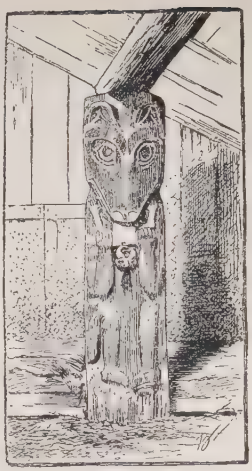
TOTEM POLE, ALERT BAY.

TOTEM POLES, WRANGELL.

In this village the front of the principal house was highly ornamented by painting. The decoration represented a conventionalized bear

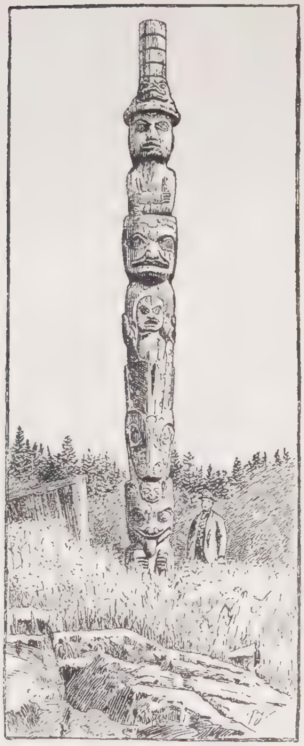


EAGLE



BEAR

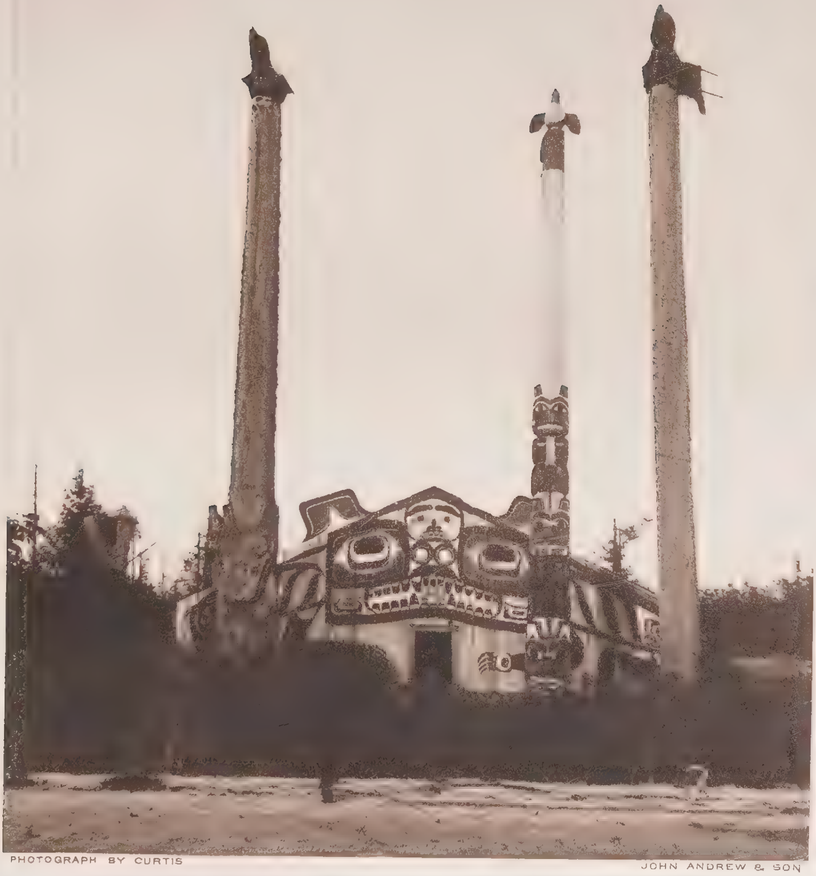
INSIDE OR ROOF-POST TOTEM POLES, CAPE FOX.



TOTEM POLE, WRANGELL.

split from the tail to the nose along the middle line, and the two halves painted one on either side of the front of the house, so that the two halves of the nose met above the door. The ear on either side protruded above the sloping roof line.

The ornamentation is by no means confined to the exteriors of the houses. In some cases the roof posts, or uprights supporting the enormous rafters which uphold the roof on either side of the house are highly carved and painted, and at times other carvings, usually also painted, are set up in different parts of the building. Most of the totem poles seen by tourists visiting Alaska are at Wrangell. Several of these are shown in the accompanying illustrations. In the houses



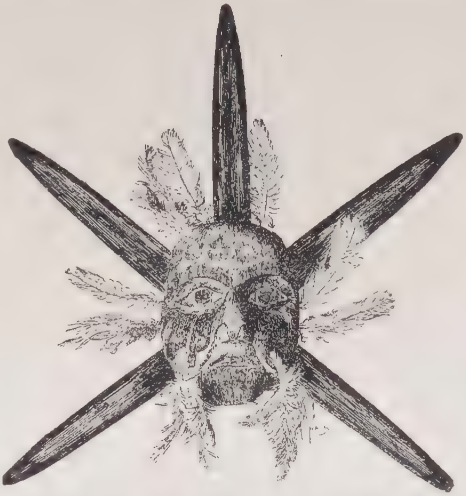
PHOTOGRAPH BY CURTIS

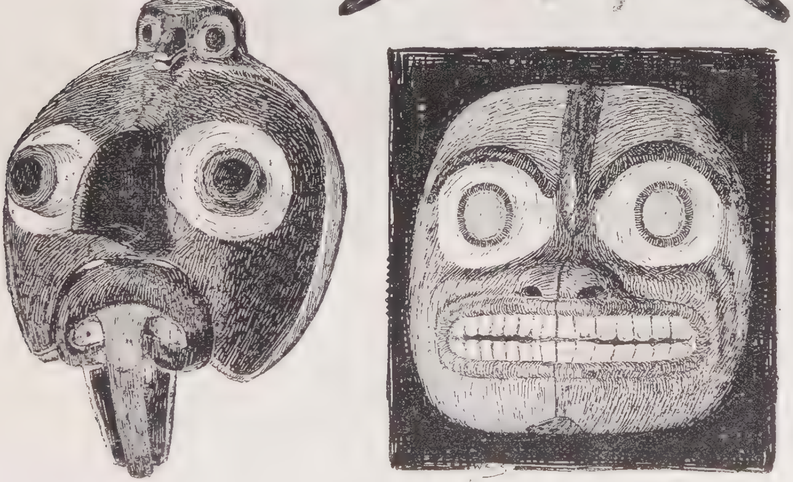
JOHN ANDREW & SON

CHIEF'S HOUSE, DESERTED VILLAGE, CAPE FOX

are kept the elaborately carved and painted masks used in ceremonial and religious dances, and highly reverenced for the mysterious power they are supposed to possess. They are of diverse forms and patterns: some represent the heads of birds and beasts; others the human face in repose or distorted.

The variety in these masks is quite extraordinary. They are an important feature of all the ceremonial dances practiced by these Indians, and as these ceremonies occupy a considerable portion of the people's lives, it may be imagined that the masks are numerous and diverse. Besides the forms mentioned, masks often represent conventionalized animals hardly to be recognized

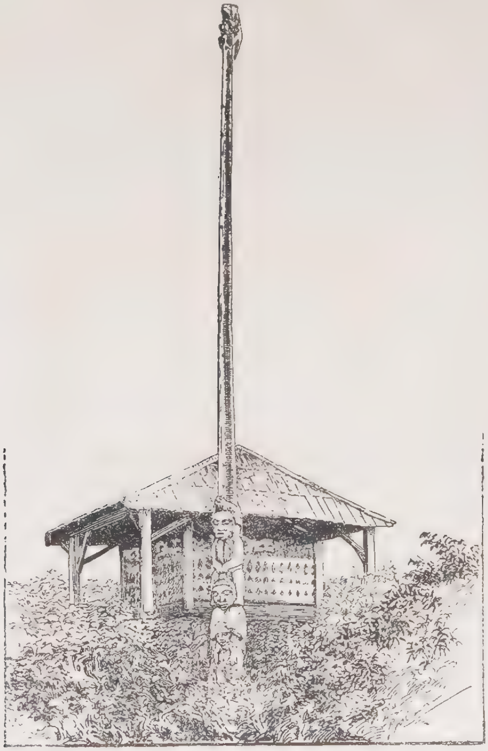




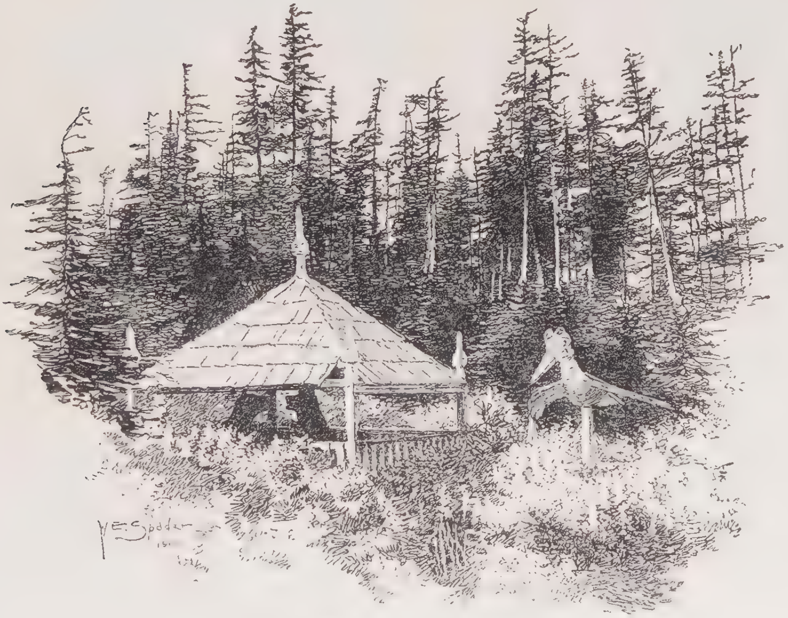
TLINKIT MASKS.

except by one who has made the subject a study, while still others represent mythical and sacred personages. Certain rayed masks, not unlike the one shown on page 149, are regarded as sun masks. Masks are often ornamented with fringes of hair, down, cedar bark, or quills; others are inlaid with pieces of abalone shell or bits of ivory. Those representing the heads of huge birds are sometimes so arranged that by pulling certain strings the bills may be rapidly opened and shut so as to make a clattering sound. Masks of another class are double. The outer portion is divided vertically — and sometimes horizontally — in two or four pieces, which are hinged to the solid inner piece. These outer pieces, when strings are pulled, fly apart and outward and reveal another face within. Of the two faces the outer one may be that of an animal and the inner of a man.

The most common form of animal mask represents the eagle, raven, puffin, hawk, bear, wolf, or deer. To the left on page 149 is a puffin mask.


INDIAN GRAVE AT WRANGELL.

At a little distance from the village, usually overlooking the water, sometimes on a steep side hill, or on a little point which forms the side of a bay, are the graves of some of the dead. Common people are usually burned and their ashes put away, either in a hole bored in one of the totem poles, which is afterwards plugged up, or in a little box on a pole in the common burial ground, or in a dead house as shown in the sketch on p. 152, but the shamans, or mystery men, are not burned. They are buried with ceremony, on or under the ground, and over them is often erected a platform which supports one or more images, sometimes of colossal size. On such a grave in the village above referred to were the carved wooden figures of two bears, perhaps six or seven feet tall, sitting on their haunches. Over another was a more ancient image, a huge bird built of wood, with outstretched wings

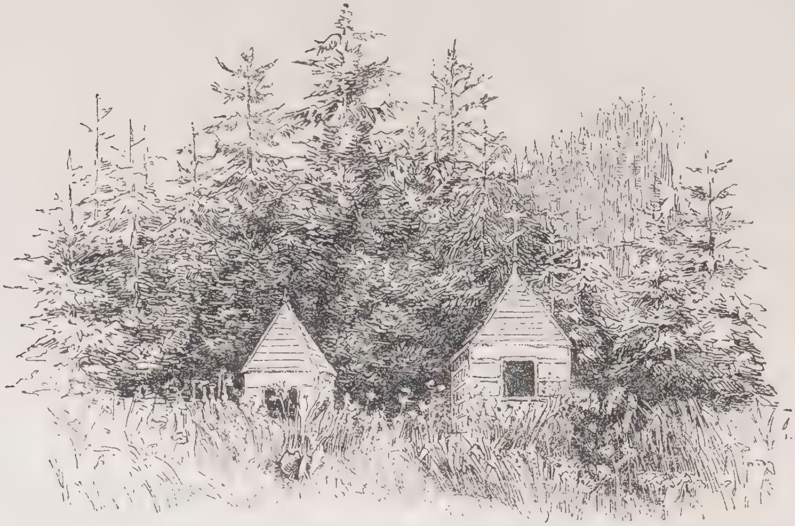


GRAVES OF SHAMANS, CAPE FOX, ALASKA.

and a long beak. In a general way it resembled a heron flying, and reminds one strongly of the mythical bird

HoXhoq spoken of by Dr. Boas in his account of the social organization of the Kwakiutl.

At Taku Harbor we visited the deserted remains of a small Indian village near which were several dead houses. These were examined by Dr. Merriam who found in them charred human bones and teeth. After the bodies had been burned the bones had been gathered up and put into wooden boxes, or in some cases simply laid on pieces of board and placed inside the dead houses.



INDIAN DEAD HOUSES CONTAINING CHARRED HUMAN BONES, TAKU HARBOR.

In striking contrast to this village and to the Tlinkit camps seen farther to the northward, was the spectacle witnessed during our call at the colony of New Metlakahtla, on Annette Island. It was to this barren island that Mr. William Duncan, in 1887, brought his little flock of civilized Metlakahtla Indians, when the combined persecutions of Church and State had made British Columbia too hot to hold them. Abandoning all the property they had accumulated in the town that they had made, they pushed their way across the straits to this island in the

PHOTOGRAPH BY HARRIMAN

JOHN ANDREW & SON

Mr Harriman's Kadiak Bear
LYING ON THE HILLSIDE WHERE IT WAS SHOT

United States, and like any colony of settlers in a new country, began to fell the timber to build themselves houses, to erect a sawmill, and to cultivate the ground.

TOWN HALL AND CHURCH, NEW METLAKAHTLA.

Only a few years had passed when the property of the colony was as great as it had ever been, and since that time it has gone on prospering. The town is laid out with straight, broad streets, and wide board sidewalks. Each house and its garden is surrounded by a fence; the people wear civilized clothing, work at the fishing, in the sawmill, or in the cannery for six days in the week, and rest on the seventh, attending church service in the edifice which they erected with their own hands, and which is a piece of architecture which would be called beautiful in any land. Except for their color, and for the peculiar gait, which seems to be common to all these fishing Indians, these people and their wives and children could hardly be told from any civilized community of a thousand souls anywhere in the country.

It took many years for Mr. Duncan to change these Indians from the wild men that they were when he first met them, to the respectable and civilized people that they now are. Whatever they are to-day Mr. Duncan has made them, and he himself and no other is responsible for the change in the individuals that have been born and lived and died, and still live in this colony during the period of his wise and beneficent influence over them. He has kept them by themselves, teaching them to live as the white man lives, and yet not letting the white man come in among them. They govern themselves in town-meeting fashion, consulting Mr. Duncan frequently as to what they ought to do. Liquor is unknown among them, except when occasionally some of the young men go off to a distance to visit other villages, or to work in other canneries, and while absent drink and get into trouble. Then they return to Metlakahtla and receive good advice, and are strengthened anew to resist temptation.

Within the past two or three years, since the discovery of gold in Alaska, persistent efforts have been made to induce Congress to deprive these Indians of the home they have made for themselves on Annette Island; it has been proposed to confine the Indians to a small portion of the island, and to throw the remainder open to settlement. The ostensible reason advanced for such a course is that deposits of precious metal have been found on the island, and ought to be worked. As a matter of fact, this is not true. The island has never been prospected at all, for the reason that whenever white men land Mr. Duncan's police promptly arrest and expel them. This is done in accordance with the agreement made with the colony by the United States Government, which, before they moved to Annette Island, promised that if they would take it for their home they should never be disturbed. This promise should be kept. To open a part of this island to settlement, as proposed, would be to deprive the Indians of their means of subsistence, for it would take away from them the water power which runs their sawmill, and the salmon on which they depend for support. Such a wrong should not be permitted.

The Harriman expedition first saw Alaska Indians at this village of New Metlakahtla. We landed here on Sunday morning, early in June, and were most kindly received by Mr. Duncan, who showed us about through the public buildings, talked entertainingly of his experience with these Indians, and later preached in Tsimpsian a sermon to a large congregation of Indians.

NEW METLAKAHTLA.

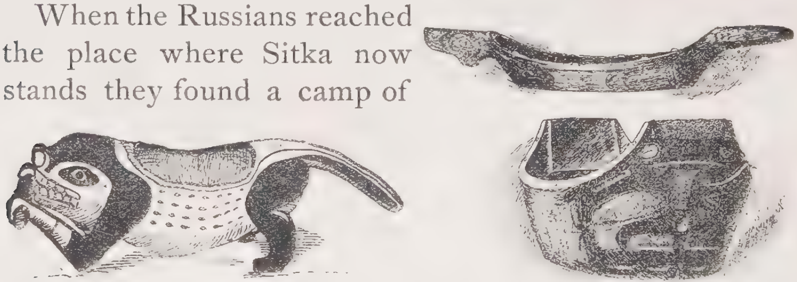
The village, as we wandered through it that Sunday morning, was like an old-fashioned New England hamlet in its peaceful quiet. There was no one abroad. Until the church bell began to ring the people remained in their houses, and then from each door a little family stepped out, and all took their way toward the church until the broad board walks near the edifice were crowded with the people. It would be hard to imagine a more decorous and attentive audience; obviously their thoughts were fixed on the discourse to which they were listening, and neither man, woman, nor child turned eyes toward the company of strange white people which crowded into the church behind them.

Their sawmill, salmon cannery, and four stores give the community a comfortable support. Among the men are blacksmiths, carpenters, shoemakers, tailors, and other handicraftsmen. They have built their own houses, their church, their school-house, guest-house, and council-house. Some of the dwellings are two stories and a half in height, comfortable in appearance, and neatly kept.

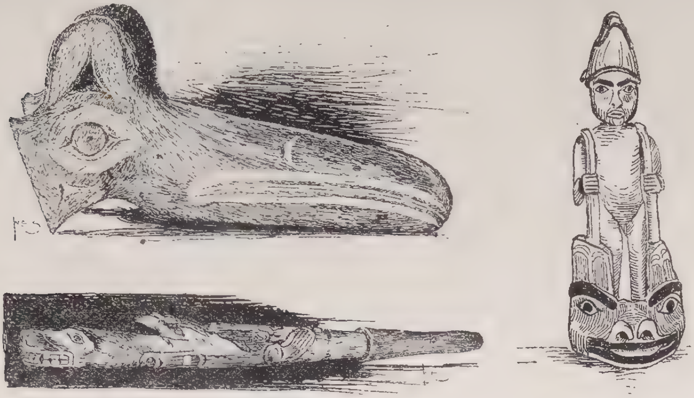
CARVED DANCING MASK.

At Juneau a few Indians were seen, chiefly men in their canoes starting out for the fishing, or women sitting on the wharves offering their baskets and other simple articles made for trade. At Sitka, however, the Indians were more numerous. Here we had an opportunity not only to see something of the Indians and of how they lived in their old-time way, but also to examine the Sheldon Jackson Museum, and in some of the stores, a great deal of material in the way of the primitive implements which are now practically discarded.

When the Russians reached the place where Sitka now stands they found a camp of Indians from a village called Sitko, on the opposite side of the island. The Russians questioned the Indians as to who

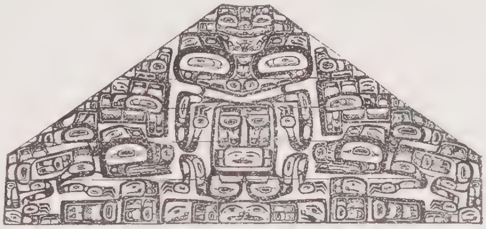

CARVED DISHES, SITKA.

they were, what was the name of the place, and on other matters; but as the Russians could speak no Tlinkit, and the Indians no Russian, they did not very well understand each other. The Indians told the Russians that they were the Sitko, the people from that village; but the Russians understood them to mean that this was the name of the place where they were camped, and so they called it Sitka, and Sitka it has been ever since, although the real Sitko is far away.



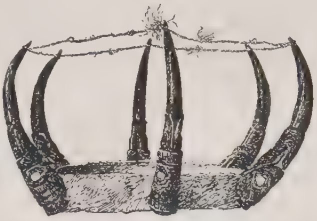
TLINKIT CARVINGS.

At Sitka as everywhere on the coast, the houses of the Indians are built close above the beach. In exterior appearance they do not differ from those of the white man, but usually there is only a single room within on the ground floor. Occasionally a house front is ornamented with elaborate paintings, in the old style.

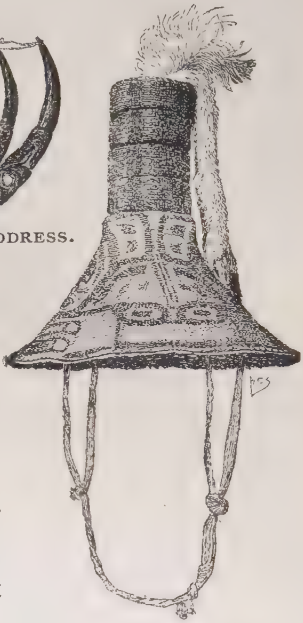


PAINTING ON FRONT OF HOUSE OF CHIEF ANNAHOOTS, SITKA.

The Indians still observe many of their old customs and possess not a few of their ancient ceremonial and religious dresses, though neither the customs nor the dresses are often seen by the whites. Through the great kindness of Lieutenant Emmons of the Navy, we were enabled to visit one or two of the principal men, and see objects, such as elaborate dancing masks, shaman's hats, Chilkat blankets, and other things rarely exposed to the common eye.

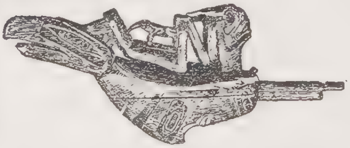


TLINKIT SHAMAN'S HEADDRESS.



TLINKIT SHAMAN'S HAT.

While at Sitka we learned that many of the Indians were absent at Yakutat Bay, where they were catching the hair seals, whose oil throughout the year furnishes an important part of their subsistence.



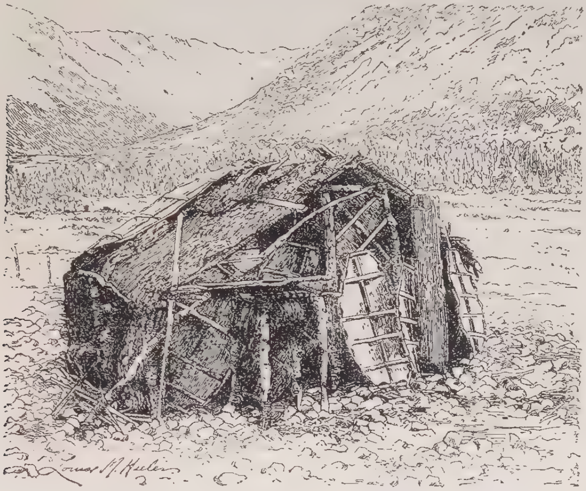
SHAMAN'S CARVED RATTLE AND STAFF.

On reaching Yakutat Bay we found three camps of Indians all engaged in the hair seal fishery. The three camps were thought to represent Indians from different localities, Juneau, Yakutat, and Sitka. They were camped on the gravelly beach, just above high water, and for the most part occupied ordinary canvas wall-tents, though some few lived in the square bark-covered shelters which in ancient times were their summer homes. These shelters consist of a square frame of poles, loosely covered by strips of spruce bark, from a foot to eighteen inches

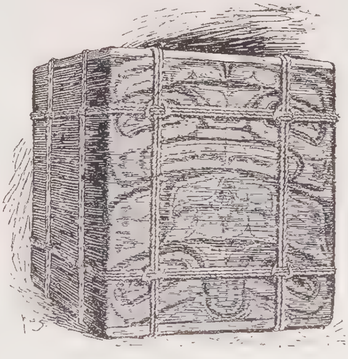
Painting by F.S.Dellenbaugh

[illegible]

wide and eight or ten feet long, laid on the framework, and held in place by slender poles placed over them. This bark must of course be brought from a distance, since trees large enough to furnish such bark do not grow in the neighborhood. At most of these bark shelters, skins of the hair seal still on the drying frames, were leaning against the wall, outside, and in some cases had been thrown up on the roof.

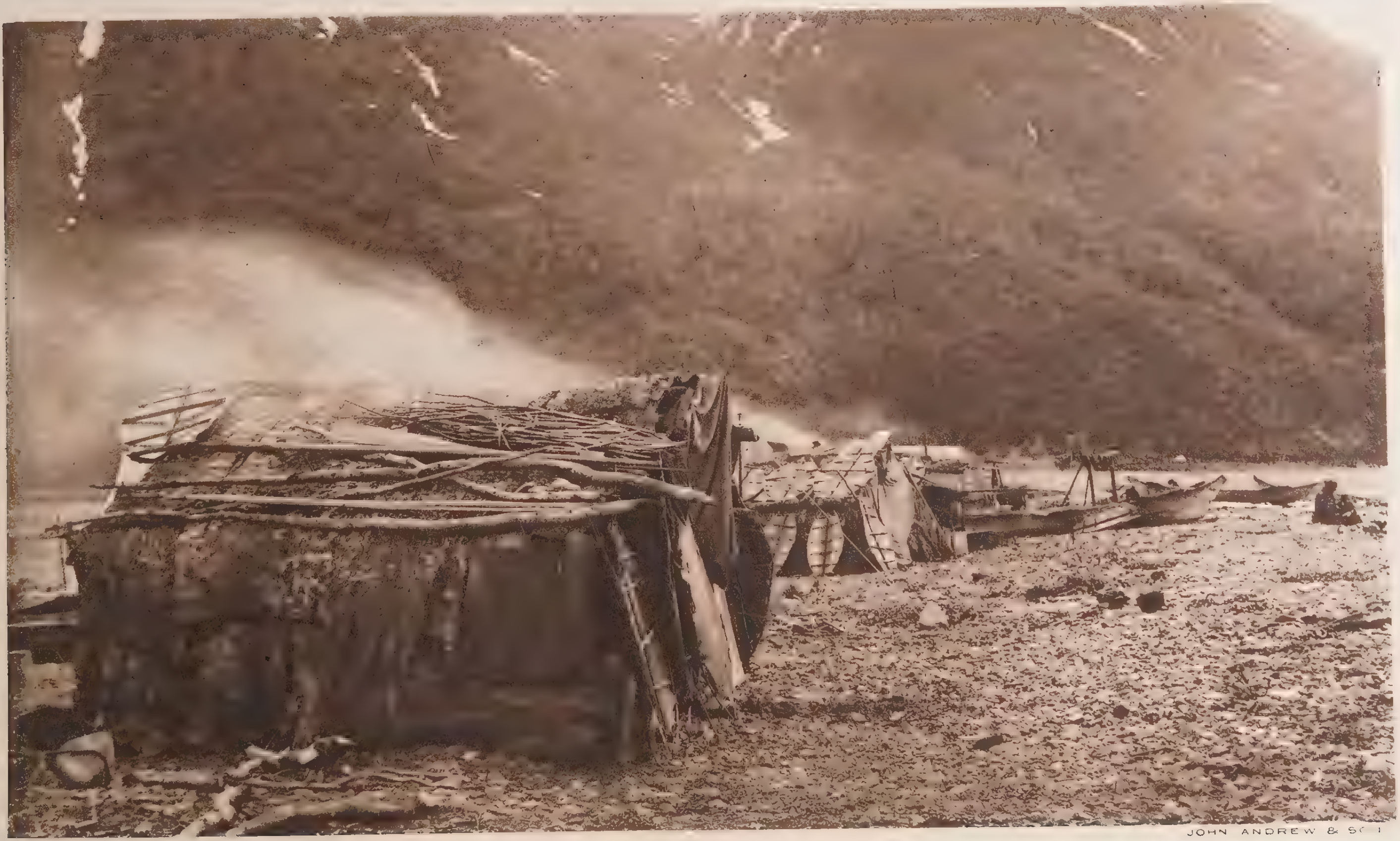


PRIMITIVE BARK SHELTER, YAKUTAT BAY.



OIL BOX.

In the center of this shelter is the circle of stones forming the fire place, and over the fire, resting on the stones, is the pot full of strips of seal blubber, from which the oil is being tried out. The woman who watches the pot from time to time ladles out the oil into small kegs and old tin cans, or rarely into ornamented rectangular boxes of a primitive type. These boxes, as is well known, are made in three

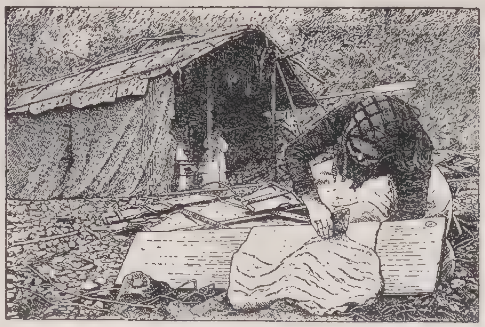


PHOTOGRAPH BY CURTIS

JOHN ANDREW & SON

INDIAN SEALERS' CAMP, YAKUTAT BAY

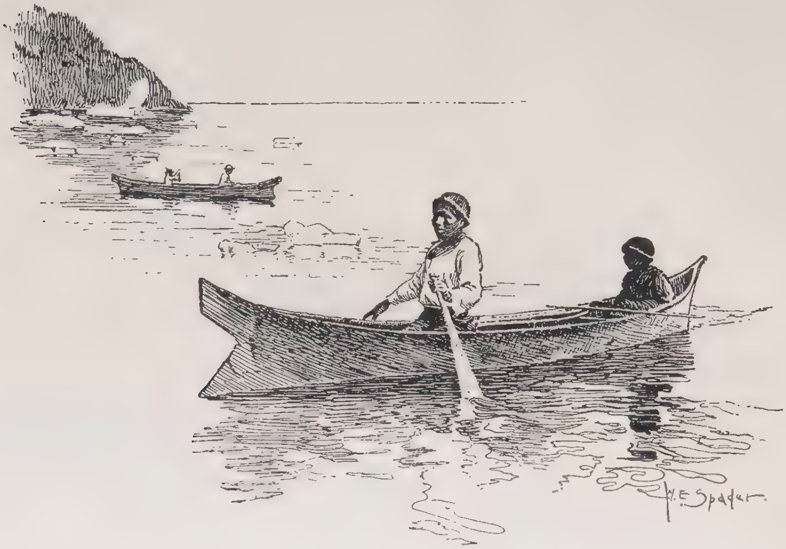
body and put to one side, and the remainder, consisting of head, backbone, and attachments, lifted out of the skin and thrown away upon the beach. All the cutting is done with a broad crescent-shaped knife of iron or stone, the back of which, if of iron, is set in a rounded wooden handle, in which a thumb hole is sometimes made. When a woman has removed half a dozen seal skins, she kneels on the ground behind a board which she rests against her knees, and spreading the hide, hair side down on the board, rapidly strips the blubber in one large piece from the hide, which as she draws it toward her is rolled up by a twisting motion into a thick rope. The great sheet of pinkish-white blubber is then cut into strips and put to one side, to be tried out a little later.



FLENSING SEAL HIDE, YAKUTAT BAY.

The Indians kill the seals not for the flesh, although this is eaten, nor for the hides, though these are used, but for the oil, which is a necessity to them. They drink it, preserve berries in it, and use it for cooking, so that it really forms a considerable and important part of their food. The month of June, therefore, is usually spent in Yakutat Bay, on what is perhaps the greatest hair sealing ground on the coast. When the Harriman expedition reached that point there were between three and four hundred people gathered there to secure the annual supply of oil.

The seals are hunted in small canoes, usually occupied by two persons. They are light, and until one has become accustomed to them, seem cranky and likely to tip over. The shape of the cutwater is peculiar, for under the prow the wood is cut away backward, and beneath this again projects forward just above the water's level, with the result that this projecting point of wood first strikes and pushes away the ice cakes which so thickly float upon the water's surface, and prevents them from battering and chafing the bows of the canoes.



YAKUTAT SEALING CANOE.

The two seal hunters in the canoe may be two men, or a man and his wife, or a man and boy. The hunter sits in the bow and his companion in the stern, while amidships are placed three or four large stones for ballast, weighing in the aggregate 150 or 200 pounds. Each occupant sits or kneels on a little platform fitted into bow and stern, or perhaps on a pile of branches covered by a blanket, a coat, or a skin, so as to keep him above the water, of which there is always more or less in the canoe. To the right of the bowman, and so of course immediately under his hand, are his arms, usually a Winchester rifle, or double-barrel shot gun, and a seal spear ten or twelve feet in length. Sometimes the hunters wear white shirts and hats, made of flour sacks, and sometimes white cloth is hung over the gunwales of the boat, so as to make it seem like a piece of floating ice. This precaution is less commonly employed where ice is abundant, as in Yakutat Bay, than in places where there is less ice. Many of the bergs here are covered with dirt, and are of all shades from white to black. Much of the surface of the upper end of Yakutat Bay is covered with floating ice which is continually falling from the fronts of the glaciers which pour into it, and it is among this floating ice that the sealing is done. The hunters paddle along slowly, keeping a sharp lookout for the seals. When one is observed they sit still, but as soon as it dives they paddle as swiftly as possible toward the spot, continuing their efforts until it is almost time for the seal to reappear. They are so familiar with the habits of the animal that they can gauge the time very closely.

SEALER'S HUTS OF DRIFTWOOD, GLACIER BAY.
HUNYA INDIANS.

SEALER'S HUT, YAKUTAT BAY.

When the seal is about due at the surface the paddlers stop and look for him, the hunter holding his gun in readiness to shoot. If the seal appears within range the shot is fired, and if the animal is wounded both men paddle to him as fast as possible, and the hunter tries to spear him, either by throwing or thrusting with the spear. A long, light line is attached to the shaft of the spear near its head, and the end of the line is retained in the boat. The spear point, being barbed on one side, seldom or never pulls out, and the seal is dragged to the side of the canoe, struck on the head with a club, and taken on board. If the first shot should have merely wounded the seal, and it is impossible to spear him, he is pursued and shot again whenever he comes to the surface. Few seals are lost unless they can get among the thick ice where the canoe moves with difficulty, and the floating blocks interrupt the view. When a seal is taken into the boat an equivalent weight of stones is thrown overboard to lighten the canoe. Often before noon the canoe has all the seals that it can carry, and returns to the camp.

HUNYA SEALER'S CAMP, GLACIER BAY.

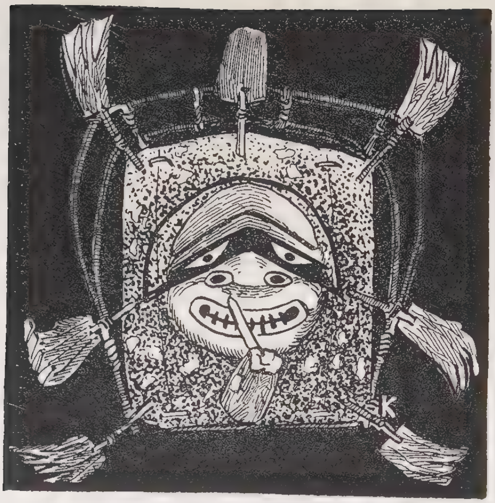
When the village is reached women help unload the canoe and carry the seals up the beach, while the men take the boat up above high-water mark.

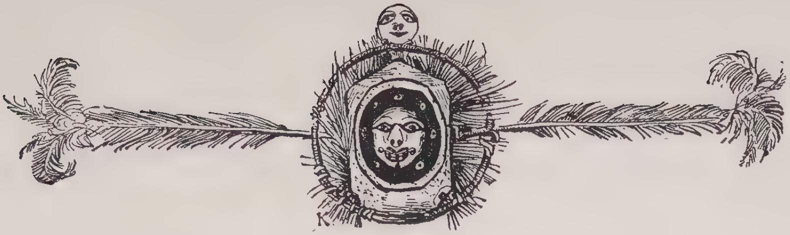
It would be difficult to form a close estimate as to the number of seals killed by these Indians, but more than 500 skins were counted in the camp where we spent most of our time, and it would seem that a thousand seals would not be too large a number to be credited to the three camps that were located near the head of the bay.

For many generations this has been a sealing ground for the Indians, and in some places the beach is white with weathered bones and fragments of bones that represent the seal catches of many years. The surroundings are not attractive, for the place resembles a slaughter-house. The stones of the beach are shiny with grease; seal carcasses and fragments of carcasses are spread along the shore, and there is an all-pervading odor of seal and seal oil. The place is a busy one. Back of the beach is a lagoon of fresh water, from which the Indians get their drinking water, in which the children wade about, sailing their canoes, and in which the mothers bathe their babies.

North of Yakutat Bay no Indians were met with, all the natives seen from that point onward being Aleuts or Eskimo.

DEATH'S HEAD CARVINGS.





THE ESKIMO WE SAW

It was at Prince William Sound that the Harriman Expedition saw the first Eskimo. According to Dr. Dall, the native people of Kadiak, the eastern end of Alaska Peninsula, and Cook Inlet down to Copper River, are genuine Eskimo and speak a dialect closely like that of the Arctic Eskimo and quite different from that of the Aleuts. The Aleuts do not come farther east than the Shumagin Islands. We first met them at Unalaska; afterward at the Pribilof Islands.

At the present day the Aleuts are supposed to number less than 2,000 people, though the old navigators who discovered their existence gave them a population of from 25,000 to 30,000, which seems not unreasonable when we consider the conditions of their life in their primitive estate, and the abundance of their food supply. These people are of Eskimoan stock, but the separation of the two branches must have been long ago for they speak a language which the Eskimo do not understand. Their traditions are so similar to those of the Eskimo, and the implements which they used in primitive times so much the same that there is no longer any doubt about their relationship.

The Aleuts have long been under the influence of the Russian Church, and have largely abandoned their primitive ways. They are now Christianized and in a degree civilized. They are a hard-working people, but nevertheless find it difficult to gain a subsistence under the changed conditions which surround them, and the increasing scarcity of the wild creatures on which they used to depend for food. At Unalaska all the laborers are Aleuts, as are also all those employed in the fur-seal fisheries on the Pribilof Islands.

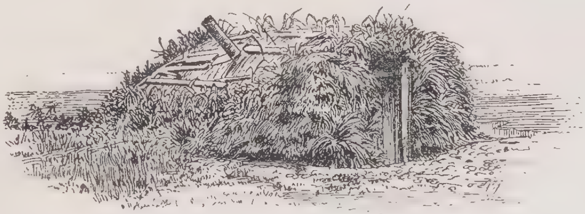
The name Aleut was applied by the Russians to the inhabitants of the Aleutian Archipelago as well as to the inhabitants of Kadiak Island and the southeast shores of the Peninsula of Alaska. Dr. Dall believes that at one time, until driven out by the Indians, these people also occupied the north shore of the Alaska Peninsula. He believes further that the Aleutian Islands were populated at a very distant period, and that those who first occupied them were more like the lowest grades of the Eskimo than to the Aleuts of historic times; and that while the development of the Eskimo went on in the direction in which it first started, that of the Aleuts was modified and given a different direction by the conditions of their

BIDARA OR ALEUT SKIN BOAT, ST. PAUL ISLAND, BERING SEA.

surroundings. Population entered these islands from the eastward, that is, from the continent, and little by little spread along the chain of islands. Many hints as to the change and development in the people and their ways of life have been found by Dr. Dall in the shell heaps which he has so carefully studied, and on which he has reported so fully and so entertainingly.

The Aleuts of to-day are not only greatly changed from their primitive conditions by the partial civilization forced on them by the Russians during the period of their occupation, but they are also modified by a considerable infusion of Russian blood due to that occupation.

Away from the settlements, however, they still live somewhat in their old fashion, and at the remoter villages, such as Kashega, Chernofski, and Akutan, occupy the barábara, an oblong, rectangular house with vertical walls only two or three feet high, with a roof sloping up to a height of about six feet, where it becomes flat again. Such houses are from twelve to fifteen feet wide, and from eighteen to twenty long; the door is in one end, and in the middle of the flat roof is a smoke hole, two feet long by 18 inches wide, immediately above the fireplace. At a distance of about four feet from the side walls of the house a stout pole is laid on the ground for the whole length of the structure; between this pole and the wall the ground is covered with hay or straw, forming the sleeping places. At the back of the house and thus opposite the door, in several of these houses that I entered, was a small altar, bearing a cross, and before it a


BARÁBARA OR NATIVE ALEUT HOUSE AT UNALASKA.

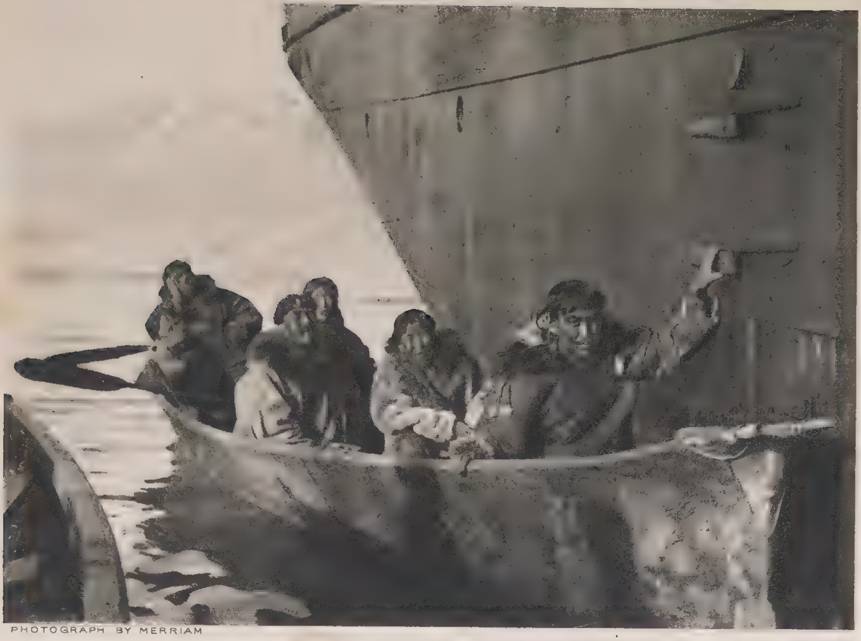
low wooden box or platform on which the worshipper might kneel. Practically all of these Aleuts belong to the Greek Church, and conform to its outward observances.

A THREE-HATCH BIDARKA.

The barábara is built of wood, sometimes of planks neatly joined together, or again of strips of cottonwood, roughly split out and fitted as closely as possible. Over this foundation of wood is a thick thatch of dried grass, held in place by heavy sticks laid upon it, which in turn are bound down with withes of willow. Sometimes the covering is merely this thatch, or it may be overlaid with earth and sod, on which grows a rank vegetation. The buildings are warm, dry, and comfortable, and it is stated that flies and mosquitoes never enter them. This is no doubt explained by the fact that when occupied they are extremely smoky.

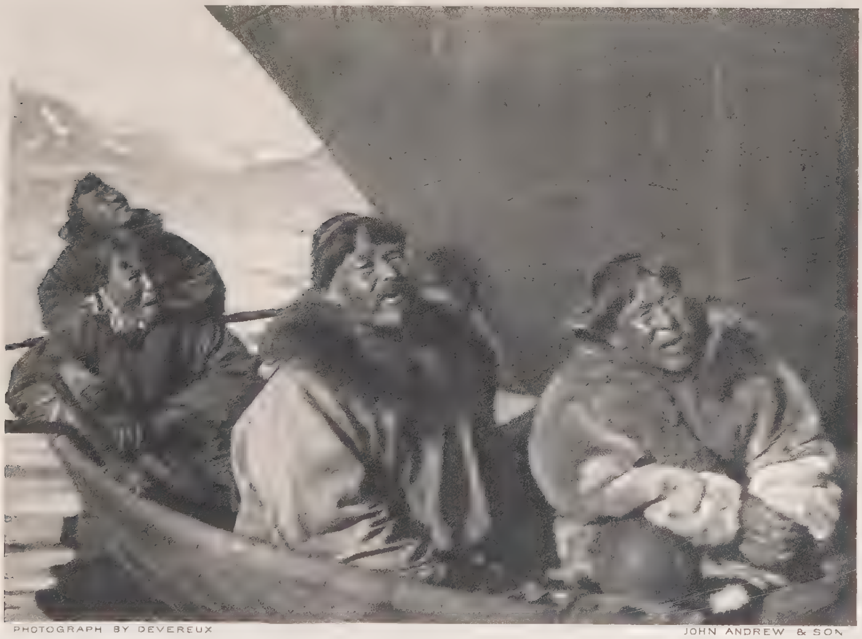
Away from the few settlements, the Aleuts still depend entirely on fishing and on the chase. The population is sparse, and the country is divided into districts for fishing and for hunting—each district belonging to certain families and handed down from father to son. No Aleut trespasses on the territory of his neighbor, either for fishing or hunting. Near the mouths of certain salmon rivers visited, we found the barábaras belonging to the owners of the fishing there, and even their drying scaffolds, and some of their fishing implements hung up against the time when they should return, in the season when the salmon are running.

The Harriman expedition's view of the Aleuts was, of course, hasty and superficial. It does not appear worth while to repeat here what has been written by explorers whose opportunities for studying them were so much better than ours.



PHOTOGRAPH BY MERRIAM

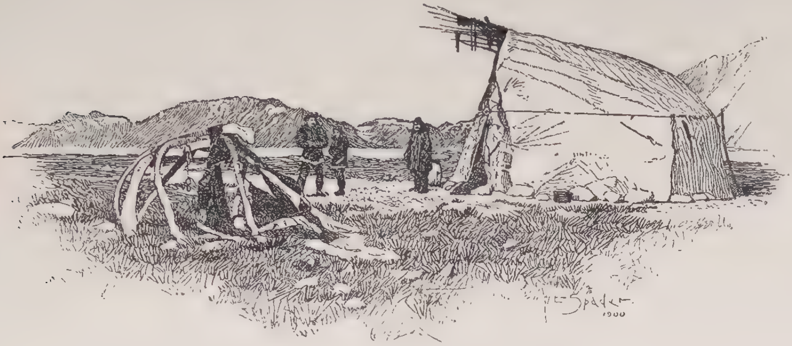
ESKIMO ALONGSIDE SHIP



PHOTOGRAPH BY DEVEREUX JOHN ANDREW & SON

PLOVER BAY, SIBERIA

Our next view of northern peoples was at Plover Bay in Siberia, which the ship reached a day or two after leaving the Pribilof Islands. Here was found an Eskimo village, apparently long established; it consisted of half a dozen topeks or summer houses, and a greater number of winter houses, most of which were then unroofed and dismantled, and either empty or used as storehouses for casks of oil, skins, sledges, drying frames, and a variety of articles not in present use.



ESKIMO SUMMER HOUSE AND FIREPLACE, PLOVER BAY, SIBERIA.

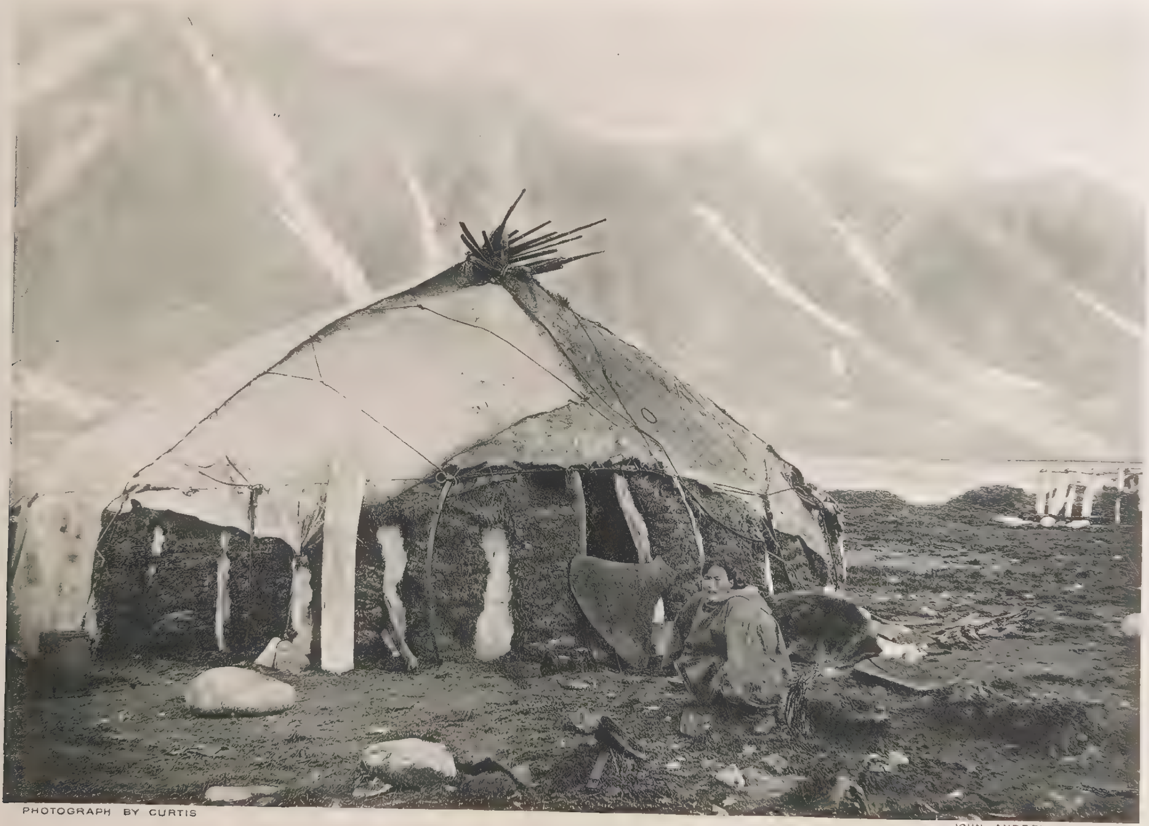
ESKIMO WOMEN AND CHILDREN, PLOVER BAY.

The inhabitants of the village numbered perhaps thirty, about twenty men and women and ten children. They were now occupying their summer houses, which were roughly circular in shape, and consisted of vertical walls formed of poles set in the ground, about which skins were stretched, and covered by a roof of skins which sloped up to a blunt point not far back of the door. The walls were perhaps eight feet high and the apex of the roof ten or even twelve. On the roof the skins came together but did not fit closely, so that there was abundant room for the smoke to escape, though there was no actual smoke-hole. The cooking is done mainly with oil and does not produce much smoke.

The door of the summer house in this village is rather wide, and sometimes so high that one may enter without stooping. The fireplace stands to the left of the door, and about it is a circle of large stones. Casks and kegs, which hold meat and oil, stand close to the walls beyond the fireplace, while to the right of the door are boxes, trunks, and sealskin bags which contain other property. From poles which run from point to point overhead are hung tools, implements, lines, and drying meat and hides.

The family sleeping apartment is cut off from the rest of the hut; it stands well back from the door and is protected from any rain that may leak through the roof by a tightly stretched green walrus hide fastened above it near the roof, and slightly inclined backward. Four poles set in the ground at the four corners support a frame of four other slender poles from which hang the walls of the sleeping tent. This is rectangular, perhaps twelve feet from one end to the other, six feet deep, and six high in front, but only about five at the back. The tent is com-

PART OF ESKIMO SETTLEMENT, PLOVER BAY.

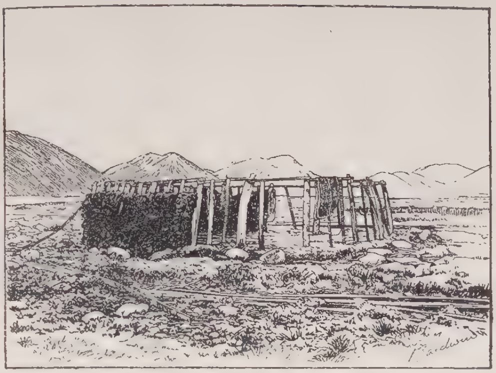


PHOTOGRAPH BY CURTIS

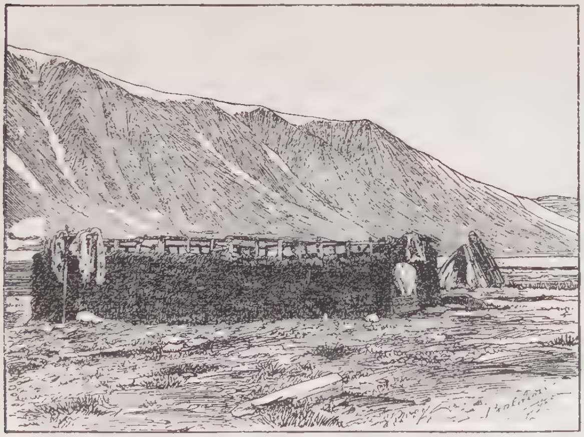
JOHN ANDREW & SON

ESKIMO WINTER HUT, PLOVER BAY, SIBERIA

posed of reindeer skins, dressed soft, but with the hair on, the hair side being out. The front wall is loose at the sides, and lifts up. The family when retiring to rest, lower the front curtain, and usually sleep quite naked. Sometimes the tent is divided in the middle by a partition, but usually there is none.


UNFINISHED WINTER HOUSE, SHOWING FRAMEWORK OF WHALE BONES.

In many respects the winter houses are similar to those used in summer, but are larger and more substantial. They consist of a circle of upright posts which stand a foot or two apart. The posts are straight whale ribs planted in the ground and projecting six or eight feet. Between the uprights are piled one upon another sods wide enough to fill the gap, and reaching up to the top. This of course makes a solid wall, quite impenetrable to cold. From the top of this wall the poles which support the roof, which is not greatly inclined, run together at the apex. As in the summer house, the poles are covered


WINTER HOUSE COMPLETELY SODDED BUT LACKING ROOF.

with dried, stretched hides of walrus and the great seal. These houses are warm and comfortable, but of course close and smoky. As soon as the weather grows warm in spring the people move into the summer houses and pull the roofs off the winter ones, sometimes taking down the sods as well, so that the interior of the winter houses may be exposed to sun and wind, and may dry.

All through the village, on poles and frames, hung the various property of the inhabitants — deer skins, some of them of the domesticated Siberian reindeer obtained by trade from the Chukchis of the adjacent interior, others of the caribou or wild reindeer of the American coast; on drying frames were spread the skins of seals and walruses, while scattered all about were seal nets, inflated seal bladders, the inflated complete skins of seals, turned inside out and drying — to be used as walrus floats, or perhaps as oil cans, or perhaps merely as sacks in which to transport property. Standing or hanging against the sides of the houses were harpoons, spears, and paddles; seal nets made of slender strips of rawhide — sealskin — while between the posts, all about the village, were stretched great lengths of seal and walrus hide, cut into slender lines, to be used for making dog harness, for lines to be attached to the harpoon when hunting, and in making seal nets. Three or four bone frames were seen, formed of the curved ribs of the whale, which reminded one somewhat of one of the Plains sweathouses. Under each one of these there had been a fire, and under one the fire was still burning and a pot was boiling over it.

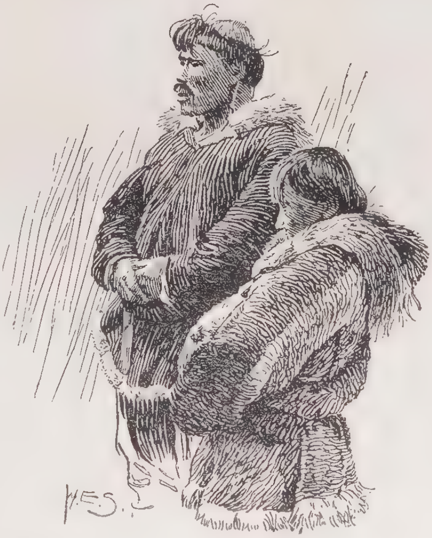
ESKIMO MAN AND WOMAN, PLOVER BAY.

It was apparent that this village had been occupied for a very long time. All about it lay the mouldering bones of whales, and eight whale skulls in various stages of decay were counted.

At various points in and near the village were seen old pits dug in the gravel of the bar, in which at times blubber is perhaps stored until it can be tried out. In other words, the pits are storehouses, though in this climate, where in the shade at least it is always cold, it would hardly seem that refrigerators were required.

It was interesting to note that in the case of one of the summer houses, and one of those used in winter, the door was closed by setting up against it the shoulder blade of a small whale. The same bone is sometimes used as a table.

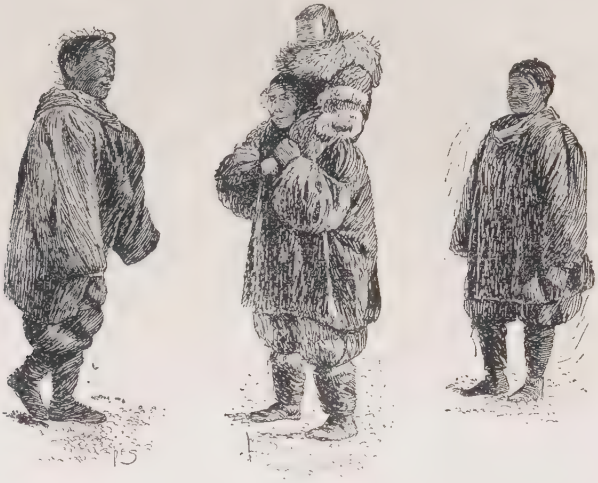
The men of this village seemed hardy, sturdy, and about as tall as the average man, but particularly robust above the waist. The women, on the other hand, were quite short. One middle-aged woman near whom I happened to stand would not have come up above my armpit. At this village I saw no women of average height. The men were erect, free walkers, and rather graceful; the women were quite the reverse, walking with an uncertain shuffle, and often bent forward. The men all had the crown of the head shaved, the hair being cut short all about in a tonsure. All had scanty beards and mustaches. Several of the older women appeared to be tatooed on the chin,



ESKIMO MAN AND WOMAN, PLOVER BAY.

cheeks, and forehead. These marks are said to be made by running under the skin a needle to which is attached a thread of sinew which has been blackened by charcoal.

All these Eskimo were dressed in clothing of reindeer skin. The parkas or shirts worn by the men usually have a collar of bear or wolf fur and are short, ending about at the waist. The women's parkas are long, usually hanging down to the knees. The men wear leggings, more or less tight fitting, and reaching to the knee. The women wear extremely large and baggy knickerbockers. Both sexes use the common sealskin mukluks or boots, which reach to the knees. The children of either sex dress like the adults.



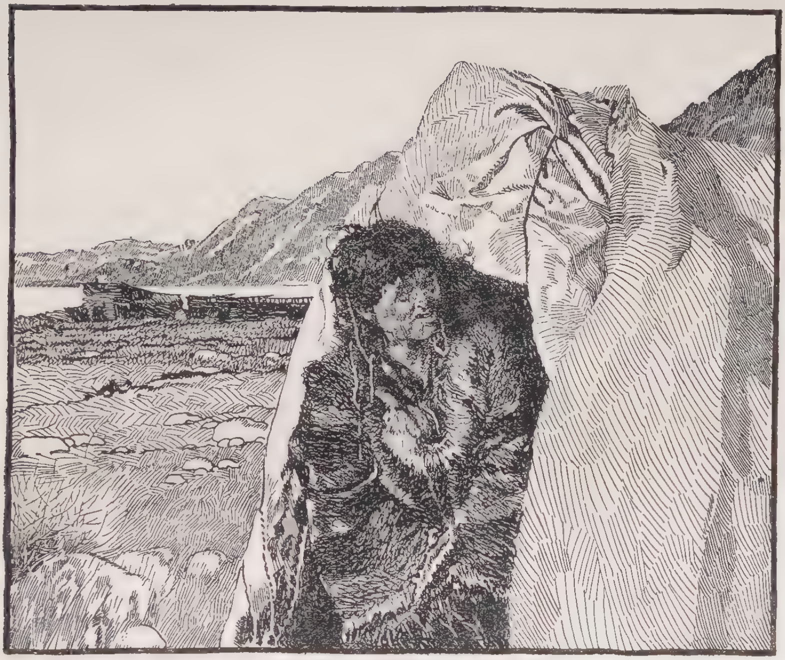
ESKIMO WOMEN, PLOVER BAY.

These Eskimo live altogether on flesh, hair seal, walrus, whales, and ducks furnishing them their chief support.

About a mile from the village, under the high bluff which seems too steep to be climbed by man, is the village burying ground. Soon after dissolution the dead are carried to the gravelly beach at the foot of this bluff, where, dressed in their ordinary clothing, they are laid on the ground and left. The dogs of the village soon devour them, all except the skulls, which roll about until destroyed by the weather.

In this village we saw an old man wearing in his cheeks the ivory labrets which all the Eskimo used to wear.

Better than any description that can be given of the village and its people are the reproductions of photographs, taken by the expedition, which accompany this account.



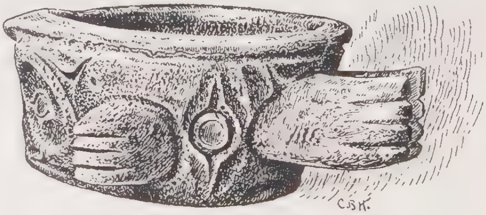
ESKIMO BELLE, PLOVER BAY.

It had been proposed to stop, after leaving Plover Bay, at Indian Point, where there is another Eskimo village, but when the ship reached there, late in the night, it was found that the surf was so heavy that no landing could be made. It had been hoped also that it might be practicable to stop at King Island, a vertical rock opposite Port Clarence, inhabited by a village of very primitive Eskimo.

They occupy caverns in the cliffs, and reach and leave their homes from stagings built out over the water on poles fastened into the rifts in the rock. It is said that it is impossible for them to land on the island in stormy weather; although they can drop into their canoes at such a time, they cannot get from them. The King Island Eskimo are reported to be of great stature, and the men to wear labrets. The women are said to equal if not excel the men in size and strength. It is also said that here in a deep cavern running back from the canyon there is a great bank of perpetual snow, which the Eskimo use for storing their meat and fish, which thus is preserved indefinitely. The King Island village is said to be a large one, consisting of nearly 200 people. Although the ship passed within sight of the island it was unfortunately not found practicable to visit it.

PLOVER BAY ESKIMO.

At Port Clarence, the next point visited after leaving Plover Bay, a large number of Eskimo were found encamped on the beach, having come there to trade with the whalers and to hire out to them for the coming cruise in the Arctic. When we reached our anchorage, several Eskimo umiaks came out to us to trade, and before long ten of these great boats containing, according to a count by the mathematician of the ship, more than 175 persons, were alongside. The boats were bright yellow, the color of the dried skin, and were filled with people, some



ESKIMO DISH CARVED FROM VERTEBRA OF WHALE.

clad in skins and some wearing red or blue shirts. The bottoms of the boats were covered with sealskin bags, mingled with deer skins, dogs, and babies. The only silent and impassive living creatures in the vessels were the dogs and the babies; all the others were holding up the articles they wished to trade—hides, bits of carved ivory, mukluks or skin boots, and walrus teeth, and all were shouting at the tops of their voices. It was a scene of great confusion. Most of what they offered to sell was not worth buying, since they had undoubtedly parted with all their best things to the whalers. The members of the ship's company gave exorbitant prices for some very worthless things, and paid chiefly in silver, most of which unquestionably soon found its way on board the whalers, to be traded there for spirits. After a time the Eskimo left the ship to return to the beach, and soon the party landed and spent some hours wandering through their camps.

ESKIMO UMIAK.

There was a continuous camp of natives stretching all along the curving beach for a mile or more. Some of these had come from Cape Prince of Wales, others from Cape Nome, and others still from St. Michael. Most had recently arrived, and their property was not yet

ESKIMO KAYAK.

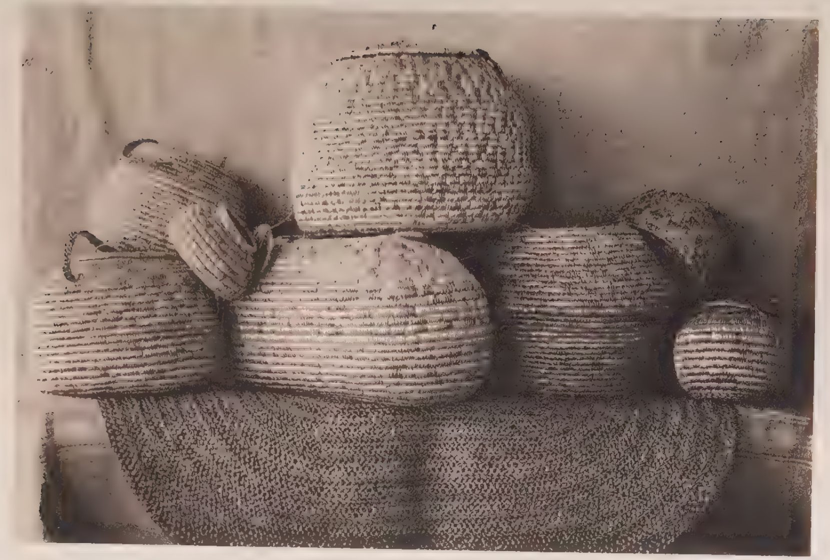
unpacked, but was lying on the beach just as it had been removed from the boats. Each camp had at least one large umiak or skin traveling boat, and there were a few kayaks. The Eskimo were well provided with food; they had fresh seal and walrus meat, dried seal meat, fresh salmon and smelts, and large quantities of dried flat-fish. They had also buckets filled with tiny, silvery fish, somewhat like a smelt in general appearance, but very small. These they were eating and also feeding to the dogs.

These Port Clarence Eskimo were a stout, sturdy people, and all of them seemed strong and healthy. Among them were several quite tall women, one at least of whom overtopped most of the men and boys about her. All, men, women, and children, seemed healthy, and all seemed quite clean.

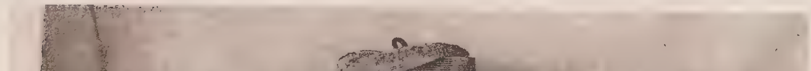
ESKIMO WOMAN, MAN, AND CHILD, PORT CLARENCE.

Each family had at least a half dozen dogs, which were usually tethered on the beach by twos and threes. While some of them were white and others black, most were gray and very wolf-like in appearance. I have never seen dogs that looked so much like wolves. They all seemed very good-natured, and not at all disposed to regard strangers with suspicion. Scarcely any of them barked at the members of the party who were strolling around among them.

The hunting implements that these people carry were many of them of primitive type — harpoons, seal spears, and fish spears, tipped with ivory or bone. I saw one



Eskimo baskets, Port Clarence, Alaska

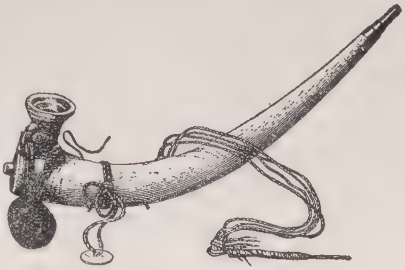


PHOTOGRAPHS BY CURTIS

JOHN ANDREW & SON

Aleutian baskets, Atka Island, Alaska

particularly fine bundle consisting of a large harpoon, two shorter spears, a fish spear, and some spear handles. Not many stone tools were seen, partly, perhaps, because they had not unpacked their possessions. One man, however, had a fine chisel of jadeite, and we came across two stone pipes of the old type. They possessed a few baskets of good form and quality, of the Point Barrow type. They had one or two adzes made from an ordinary lathing hatchet, the head having been taken off, turned half round and then lashed to the handle so as to form an adze.

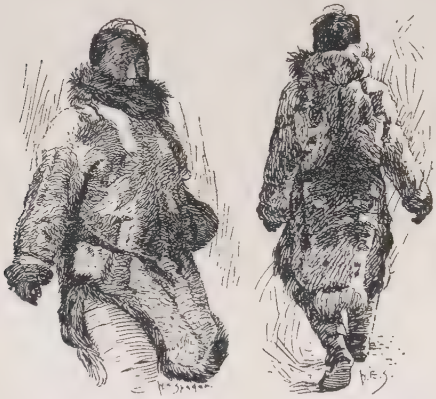


ESKIMO STONE PIPE.

In the piles of packages on the beach were seen many of the sealskin bags in which they carry their possessions. Some of these were made from the skin of the ribbon seal, others of the ringed seal, and others still, of the common Pacific harbor seal. These, skinned out through the mouth, with no other cut in them, and tied up at both ends, are used for a variety of purposes: they serve for whale floats or for oil casks, or, when completely dry, tanned, and turned right side out, for dunnage sacks. When used for this purpose a slit is commonly cut across the breast, from flipper to flipper, and this is laced up.

Most of these Eskimo had set up ordinary wall tents of canvas or muslin with a low wall and door, so that to enter it was necessary to get down on the ground and creep under the wall. There were a few oval frames of willow twigs covered with canvas; and in two or three cases an umiak propped up on its side supported the upper edge of a sheet of canvas which was pinned to the ground below.

Planted in the soil behind several of the tents were sticks surmounted by small, rudely carved figures, usually painted black or white, or black and white. One of these figures represented a bear, another a bird; on another the figure of a man and a woman stood on either side of a circular piece of wood on which were painted concentric rings, so that it looked somewhat like a rifle target. The man who was standing by the tent to which this figure belonged explained that this was 'all same sun.' Our means of communication were not sufficient to learn just what he meant by this, but the figures were unquestionably sacred emblems of some sort.


ESKIMO WOMAN, SHOWING CUT OF PARKA, PORT CLARENCE, ALASKA.

The parkas of the men and women here differed noticeably: the women's had a long scallop hanging down in front and behind, while the men's were of equal length all around, and reached down only a little below the hips. The men had the crown of the head shaved, while the women's hair hung loose or was carelessly braided at either side. Many of the children were very pretty and clean, free from shyness, and disposed to make friends.

Here at Port Clarence one or two Eskimo were seen wearing a wolf or dog tail hanging down from the belt behind. This reminded us of the report made by Popoff, long a captive of the Tchukchis in Siberia, nearly 200 years ago, when he told the Russians that he had heard that beyond the sea, to the east, there was a great land inhabited by people who had tusks growing out of their cheeks, and had tails like dogs. The old man seen at Plover Bay had labrets in his cheeks, which were these tusks, and here at Port Clarence were the men who had tails like dogs.

The outlook for the immediate future for these Eskimo is gloomy. Hitherto they have been well cut off from civilization, meeting only the whalers, who are few in number and are under a certain rude discipline. But a change has come for the Eskimo and this year of 1900 has already witnessed a melancholy alteration in their condition. The rush to the coast gold fields has brought to them a horde of miners, who, thinking only of themselves, are devoid of all feeling for others of their kind. There is no law or government in the land, the commanders of the few revenue cutters along the coast being the fountain heads of authority and having extensive areas of sea and land under their jurisdiction. White men, uncontrolled and uncontrollable, already swarm over the Alaska coast, and are overwhelming the Eskimo. They have taken away their women, and debauched their men with liquor; they have brought them strange new diseases that they never knew before, and in a very short time they will ruin and disperse the wholesome, hearty, merry people whom we saw at Port Clarence and at Plover Bay.

Perhaps for awhile a few may save themselves by retreating to the Arctic to escape the contaminating touch of the civilized, and thus the extinction of the Alaska Eskimo may be postponed. But there is an inevitable conflict between civilization and savagery, and wherever the two touch each other, the weaker people must be destroyed.

K.

12

6

OHIO UNIVERSITY LIBRARY

Please return this book as soon as you have finished with it. In order to avoid a fine it must be returned by the latest date stamped below.

CF

OHIO UNIVERSITY LIBRARIES
[redacted]
1000310589

Q
115
V.1
C.2